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ABSTRACT

The study focused on women's education in eight health professions: medicine, osteopathy, dentistry, veterinary medicine, optometry, podiatry, pharmacy, and public health. Its central tasks were to identify and explore the barriers to success that women face as school applicants and students. Almost 600 interviews were conducted with administrators, faculty members, and students in 27 schools, and were supplemented by over 60 student group interviews. In the final report are included: a detailed description of the study design; its findings and conclusions concerning the relationships of women with the professions and the schools, seven key resources for increased access to this education, and barriers faced by women in the professional training sequence; conceptual models for success in recruitment, admissions, and professional education, and strategies for testing the models; and recommendations for affirmative action enforcement, health manpower legislation, student financial aid, future research, policy, and future program efforts. Extensive data tables and measurement instruments are included. (MSE)

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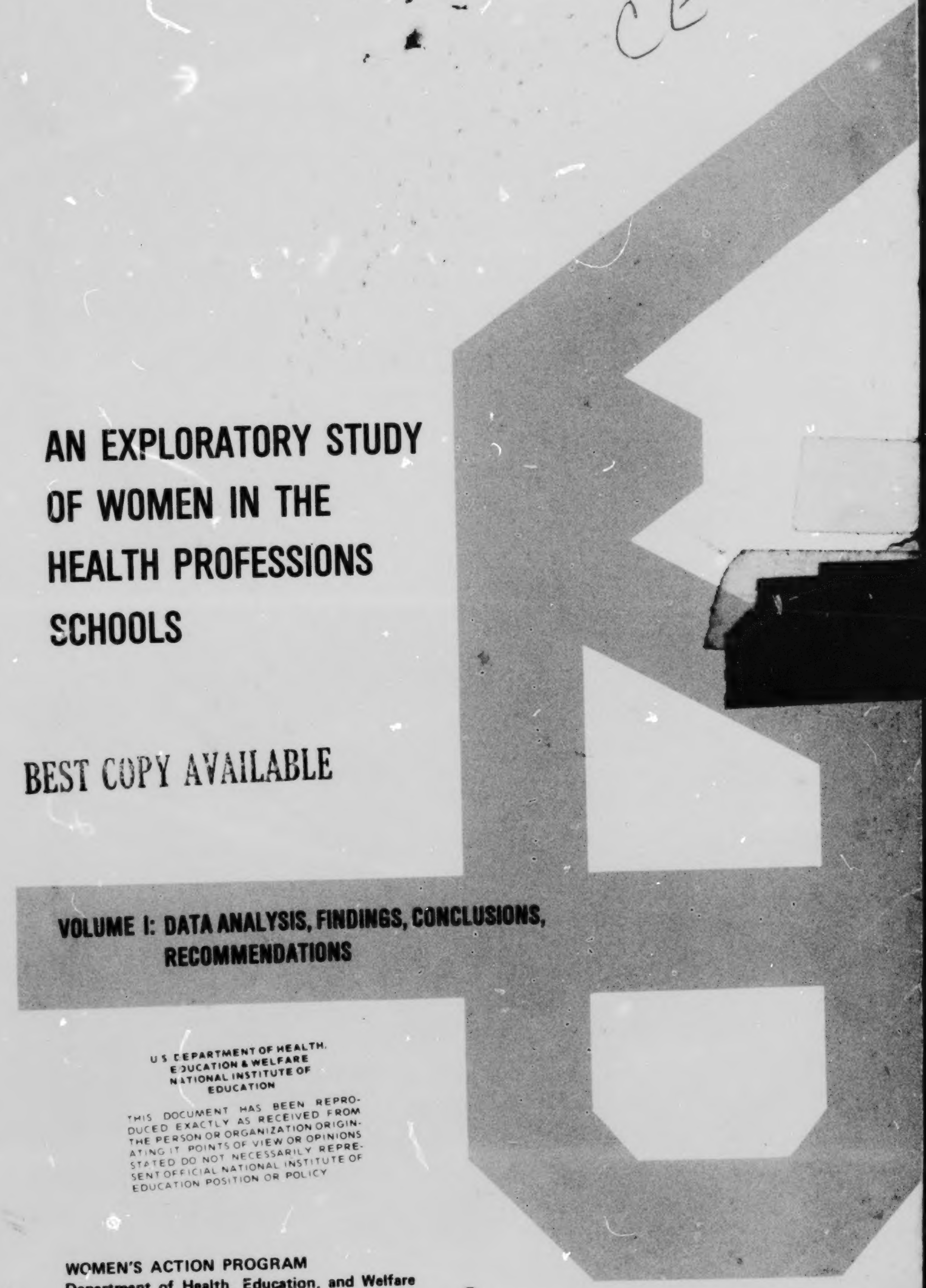

AN EXPLORATORY STUDY OF WOMEN IN THE HEALTH PROFESSIONS SCHOOLS

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VOLUME I: DATA ANALYSIS, FINDINGS, CONCLUSIONS, RECOMMENDATIONS

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WOMEN'S ACTION PROGRAM
Department of Health, Education, and Welfare

EXPLORATORY STUDY OF WOMEN IN THE HEALTH PROFESSIONS SCHOOLS

VOLUME I: DATA ANALYSIS, FINDINGS, CONCLUSIONS, RECOMMENDATIONS

Prepared by

The Women's Action Program
Office of Special Concerns
Office of the Assistant Secretary for Planning and Evaluation
Department of Health, Education and Welfare

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Prepared by

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The opinions and conclusions expressed in this report are URSA's and do not necessarily reflect those of the Department of Health, Education and Welfare.

No society is immune from stereotypes. Last summer I was part of a group which visited the People's Republic of China which, as you may know, has made great efforts to achieve equality for women--especially in the area of health care. Many of their physicians, for example, are women although very few of their surgeons are. While we were there we got a really strange explanation for that. One day we visited an embroidery factory and a hospital one right after the other. Only women were doing embroidery in the factory and when we asked the foreman why he told us that only women had the small hands and manual dexterity needed to do the fine and detailed work that embroidery requires. Later when we went to the hospital we had an opportunity to talk to one of the surgeons--a man--who was working on a piece of embroidery while we talked. It didn't compare with the work we had seen at the factory, but then presumably embroidery was not his particular skill--although he did tell us that most surgeons do embroidery to keep their fingers nimble especially since most surgeons use acupuncture for anesthesia and they place the needles themselves. When we were leaving, we asked him why so few surgeons in China were women since women were otherwise well-represented among doctors. His answer was that women do not have the manual dexterity and skill that surgery and acupuncture requires! (Sociologist, female, URSA Project Consultant)

DATA ANALYSIS, FINDINGS, CONCLUSIONS, RECOMMENDATIONS

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I. INTRODUCTION

STUDY BACKGROUND, PURPOSES, PRODUCTS

This report is a presentation of the major findings, conclusions, and recommendations of an Exploratory Study of Women in the Health Professions Schools supported by HEW Contract Number OS-74-291. The study was conducted by Urban and Rural Systems Associates (URSA) for the Women's Action Program (WAP) of the Department of Health, Education and Welfare (HEW).

The study focuses on eight health professions generally known and referred to as the MODVOPPP professions: medicine, osteopathic medicine, dentistry, veterinary medicine, optometry, podiatry, pharmacy, and public health. The study's central tasks have been to identify and explore the barriers to success which women face as school applicants and as students and to describe the discrimination process, if any, which limits women's entry into these health professions. Its central purpose--indeed its primary product--has been the development of conceptual models of the recruitment admissions, and education systems designed to maximize equal opportunities for women and to encourage their success as school applicants and students in the MODVOPPP professions.

The study was purposefully exploratory in design. According to the Request for Proposal (RFP--see Appendix A) which resulted in this contract, "The exploratory approach taken for this study is based upon the realization that not enough is known about the process of discrimination to permit more systematic research, or to assess alternative forms of intervention designed to achieve equal opportunity based on sex." Thus the heart of the study and the bulk of its findings rests on open-ended, purposefully unstructured interviews designed to surface the widest possible range of issues from a broad spectrum of respondents. Almost 600 such individual interviews were conducted with administrators, faculty members, and students in 27 MODVOPPP schools around the country. These individual interviews were supplemented by over 60 student group interviews in which an estimated 440 individuals participated.

The RFP states and implies some of the key observations and assumptions on which WAP based its request and perceived need for the study. First, even a casual look at the MODVOPPP professions shows women as a small proportion of total participants. In few countries in the world are women as unrepresented among practitioners in the major health professions of medicine and dentistry, for example, as they are in the United States. As Table 1 below indicates, among selected industrialized nations for which data on some of the MODVOPPP professions is available during comparable or relatively closely-spaced years, women represent a much higher percentage of total active practitioners for all of the professions shown than is the case in the United States (save for women in veterinary medicine in France).

TABLE 1
WOMEN AS A PERCENT OF ACTIVE PRACTITIONERS IN SELECTED HEALTH PROFESSIONS IN SELECTED COUNTRIES FOR SELECTED YEARS

	MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PHARMACY
United States: 1970	6.9	3.2	5.1	2.1	9.0
England: 1972	13.0	8.1			
France: 1967	13.5	26.6	1.2		
Sweden: 1970	17.9	26.9	6.9		76.7
Finland: 1960			6.5	11.9	85.8
1970	27.0	72.0			
Poland: 1967	46.1	80.9			78.3
USSR: 1970	73.7	77.4			94.9

SOURCE: Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, the American Public Health Association, 1975.

Data such as those shown in Table 1 are provocative for two reasons. First, they do suggest that references to biological or other "innate" characteristics are not good explanations for the relative absence of women from the MODVOPPP professions in this country; and they also suggest that the skills and abilities required to perform as practitioners in these professions are and may be learned. Second, they do reflect different systems of health care delivery, differing cultural assumptions and expectations about the appropriate characteristics of those who should deliver health care services in general, and varying cultural assumptions and attitudes about women in these professional roles in particular. That variations in attitudes and the institutions which make up health care delivery systems exist at all suggests that attitudes and institutions do consitute barriers to women's participation in the MODVOPPP professions. Thus, the variations also point to the need to understand more fully whose attitudes and which institutions serve as barriers and in what ways.

A look at the similarities and differences in women's participation in all of the eight MODVOPPP professions as shown in Table 2 also underscores the RFP's working assumption that barriers may exist which women face as school applicants and students in these professions. Differences in the proportion of women as practitioners and as students among the professions need explanation, and the recent and rapid increases in all of the professions in women's proportion of first year enrollments also need explanation. Without reference to some phenomena outside of women themselves, explanations are difficult. (See Table 2 on the following page.)

The second major basis for this study is the working assumption that policies and practices in the MODVOPPP schools themselves may be among the barriers which women face as school applicants and students. The Comprehensive Health Manpower Training Act of 1971 (PL 92-157, formally the Amendments to Title VII of the Public Health Service Act) and the 1972 Amendments to Title IX of the Higher Education Act both prohibit health professions schools which receive federal funds from practicing sex discrimination in their admissions policies or practices and in treatment of individuals after selection. As stated in

TABLE 2

ACTIVE WOMEN PRACTITIONERS, GRADUATES, TOTAL ENROLLMENT AND FIRST YEAR ENROLLMENT IN THE MODVOPPP HEALTH PROFESSIONS FOR SELECTED YEARS (BY NUMBER AND PERCENT)

		MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Active Women Practitioners: 1970	N	*21,474*	*852*	*3,270*	*1,320*	*390*	*300*	*11,670*	*NOT* AVAILABLE
	%	6.9	7.1	3.2	5.1	2.1	4.0	9.0	
Women Graduates: 1971	N	*827*	*11*	*46*	*76*	*12*	*5*	*876*	*492*[a]
	%	9.2	2.3	1.2	7.8	2.4	2.1	20.3	36.7
Total Enrolled Women: 1970-71	N	*3,878*	*61*	*231*	*467*	*82*	*16*	*3,370*	*NOT* AVAILABLE
	%	9.6	2.8	1.4	9.3	2.9	1.4	21.9	
First Year Enrolled Women: 1970-71	N	*1,256*	*17*	*94*	*144*	*33*	*9*	*1,349*	*NOT* AVAILABLE
	%	11.1	2.7	2.1	10.1	3.7	2.5	23.7	
First Year Enrolled Women: 1974-75	N	*3,275*	*106*	*631*	*407*	*133*	*27*	*1,599*[b]	*1,199*
	%	22.2	10.9	11.2	24.4	11.4	4.8	29.0	47.0
Increase in First Year Enrolled Women from 1970-71 to 1974-75	N	*2,019*	*89*	*537*	*263*	*100*		*250*	*NOT* AVAILABLE
	%	161	524	571	183	303	178	19	

SOURCE: Tables in Appendix G, Volume I, Exploratory Study of Women in the Health Professions Schools; except for:

[a] *Master's and Doctor's degrees*

[b] *1973-74 data*

the RFP, "The basis of this Request for Proposal is the belief that the schools do not fully understand their role in creating barriers for women who seek to apply, nor do they understand how they can affirmatively work toward eliminating some of these barriers. It is also recognized that DHEW needs to know more about the process of discrimination in order to provide guidance to the recipients of its resources in meeting the requirements of the legislation. Knowlege of the specific barriers to women in the health professions must become part of the overall DHEW planning effort in order for change to occur on any significant scale."

Thus the purpose of the conceptual models called for by this study for encouraging women as applicants and students in the health professions is to provide "...preliminary guidance [to HEW] for: (1) ways in which the Department can improve its present process for evaluating the effectiveness of affirmative action plans for women submitted by the health professions schools in compliance with provisions of the Public Health Service Act and the Higher Education Act; (2) changes in federal policies which will work to eliminate barriers to women in the health professions; (3) affirmative actions for women which the Department could suggest to the schools; and (4) ways in which Federal program planning and support money to the schools can be better allocated for maximum impact in eliminating existing barriers to women." Additional study products which flow from this purpose and which are also called for by the RFP include suggestions for future research based on the study's findings; an identification of data gaps and incompatabilities which hamper research and which could be corrected by revisions in HEW's reporting requirements of federal fund recipients; and an identification of "Any significant trends revealed by the information gathered [in the study]...in terms of implications for the future."

STUDY AUDIENCE(S)

The Women's Action Program is, of course, the primary audience to whom the study's findings and recommendations are addressed, for whom the study's final report is written. The range of findings and recommendations included in the report may also and secondarily be of interest and use to other HEW agencies with policy, program, research, and affirmative action compliance responsibilities. In addition, the range of findings and recommendations coupled with limits on HEW's implementation authorities and research interests suggests several tertiary interest groups or audiences.

First, the MODVOPPP schools may be in the best position to derive the most immediate, short-term benefits from the study and its findings. Based on the schools and administrators included in our study, we believe we have identified four rather distinct groups which are characterized by differences in degree of awareness of potential barriers to women and willingness and commitment to use their personal, official, and institutional authorities to implement whatever initiatives are required as change interventions. Group one includes those key administrators and faculty members who are aware of problems women experience as applicants and students and who are willing to seek--and may have already sought--new and improved policies, procedures, and programs at their institutions to encourage the success of women as applicants and students. A report such as this can help support them in their efforts. Like legislation and regulations, it can serve as an ally if and when needed. Group two includes those key administrators and faculty members who are aware of problems women experience but need assistance and information in determining particular appropriate ameliorative strategies, policies, programs and services. A report such as this can help by providing an educative, technical assistance, idea-generating function. A third group includes administrators who need assistance in understanding the issues, the problems which women face in their profession, their schools. For this group, the report serves an information-sharing, educative purpose. Finally, there is a fourth group of administrators which feels there are no barriers or sex discrimination in the professions or the schools. They are not particularly interested in a study and report such as this which is designed to support the use of federal policy as an instrument of change.

A second and related set of interest groups includes the MODVOPPP educational, and in some instances, professional associations. These associations are audiences for and potential beneficiaries of this report through their relationships to the schools. In many of the MODVOPPP professions the educational or professional association provides some recruiting, centralized application, aptitude test, and other recruiting and admissions services to member schools. Thus the associations have actual and potential influence and leverage over the size and characteristics of the schools' applicant pools and over the schools' enrolled student bodies. All of the professional associations may further exercise inflence over the schools through their roles in the school accreditation process. This report may be of assistance to some in identifying and making explicit the impact their services, programs, and policies have--or can have--on women as applicants to and students in the MODVOPPP schools.

Finally, a third group of interested parties may include research sociologists and psychologists, feminists, journalists, educators, and others interested in sex role research and/or changing the roles and status of women in society. The report's findings and recommendations may be of interest to some of these groups and individuals; some of them may be appropriate candidates to conduct much of the needed research suggested at the end of the report.

STUDY BOUNDARIES

The central topics of interest and concern to this study are women and the barriers they face as applicants to and students in the MODVOPPP health professions schools. Thus the study borders on many additional issues of current importance and interest which have implications for women in the MODVOPPP health professions and which we have addressed in our research but in very specifically and narrowly defined ways. The study also borders on many issues and topics of concern which, however interesting, are clearly beyond its boundaries.

Today education in general and medical education in particular are at the center of much debate and experimentation regarding appropriate purposes, content, and organization. In response to the incentives of federal funds and to professional, student, and other pressures, health professions schools are now experimenting with shortened curricula; increased electives; pass/-fail and other non-graded student performance evaluation systems; pre-clinical training organized around organ systems and/or symptoms and problems rather than traditional academic disciplines; early integration of clinical experiences with pre-clinical study; creation of new departments of family and community medicine; inter-disciplinary teaching aimed at creating the basis for future professional teamwork among physicians, dentists, pharmacists, nurses, and others; and a host of other changes and innovations. It has not been our task to evaluate how effective/ineffective these or other innovations are in producing good practitioners, nor do we indeed feel qualified to do so. We have, however, noted where possible the potential or actual positive and negative impact that such innovations have on men's and women's experiences in training and the extent to which they may in some instances serve to attract men and women to particular professions and/or schools.

Similarly, much interest and discussion in medicine today centers on the issue of whether a variety of forms of part-time and flexible intern and residency programs may not be possible and desirable ways of providing postgraduate medical training not only for women but for interested men as well. The questions involved in this issue are many and include concerns about the economic and organizational feasibility of such programs for the training hospitals involved; the quality of patient care which would be provided; and the quality of education which would be received. Our task and our competence has not been to answer these questions. However we have necessarily considered the ways in which flexible intern and residency programs are a central issue for women's participation in medicine and have joined in supporting those who suggest that research and experimentation on the feasibility and consequences of flexible programs are needed.

Our research in MODVOPPP schools has also necessarily made us aware that the opportunities and barriers women faculty members face in these schools are topics of great interest and discussion for the professions, for researchers interested in academic and professional women, for HEW in its concerns with equal employment opportunities, and, of course, for feminists. Since our focus is on women as applicants and students--and where appropriate and to a limited extent as interns and residents--and not as faculty members or practioners in the MODVOPPP professions, our principal concerns with both groups are the extent to which they serve as role models and sources of support for women considering and pursuing careers in the MODVOPPP professions and the extent to which they may confirm or suggest changes and trends in what women students report they experience and anticipate as problems and barriers to admissions, training, and ultimately professional practice. Neither academic women nor practicing MODVOPPP professionals are by themselves, however, the focus of the study.

Similarly, as noted elsewhere throughout this report, the women's health movement as a collection of organized groups and identifiable spokeswomen is not a primary focus of the study. As an organized entity, the women's health movement is mainly in evidence in medicine only and not in the other "ODVOPPP" professions. And while it appears to have influenced many young women in medicine in terms of their ideas about medical care and needs, few women medical students are members of any organized form of women's health collective and relatively few self-identify as members of the women's health movement.

It must also be noted that while many of the most pressing concerns in health care today cluster around issues of cost, adequacy, organization, distribution, and sophistication of health care delivery, and while resolution of these concerns will surely have profound implications for health education, these concerns are also beyond the boundaries of this study. As increasing numbers of women enter the MODVOPPP health professions, they may indeed have a significant impact on the costs, quality, and organization of health care if their professional practice preferences and patterns differ substantially from men's. This study identifies some possible area of difference in practice expectations and preferences among men and women students which suggest important topics for future and more systematic re-earch. However, it can only hint at and suggest possible differences and trends which may result from the entry of women in greater numbers in the MODVOPPP professions. The study was not designed to test or verify differences nor to predict the impact of women on these professions or on the practice and delivery of health care.

Finally, we must note with regret that the study's findings are based principally on data about and from Caucasian women and do not with any certainty apply to Black, Spanish-speaking, Oriental, or other minority women. It was both WAP's and URSA's original intentions that the study should focus as much on the special needs and problems of minority women as on those generic to all women in the MODVOPPP professions. However we very early discovered that statistical demographic and performance data on MODVOPPP applicants, students, and practitioners, while often unavailable by sex or by minority status, was never available by both sex and minority status simultaneously in the federal reports, MODVOPPP professional and education journals, and other studies and research sources and documents we used. Further, in many of the MODVOPPP schools we visited there were either no minority women or so few minority women that opportunities to interview them were extremely limited and/or non-existent. To prevent such research limitations in the future, one of our most urgent data recommendations is that statistical data always be collected and made available and presented by both minority status and sex together rather than singly.

STUDY PROBLEMS, ASSUMPTIONS, AND APPROACHES

We are living in a time of clearly acknowledged social change regarding women's roles and opportunities in both the private world of family and friendship networks and the public world of work and political activity. People differ greatly in their opinions regarding the desirability of these changes and the rate at which they are occurring, but there is almost no one who is unaware of and/or without strong opinions on the matter. Similarly, people differ in their ability to respond to these changes on a personal level--and as we found in our field work, both men and women alike often expressed confusion and uncertainty about how to behave with one another. Traditional conventions and customs regarding appropriate behaviors for men and women have been breaking-down and losing acceptance--most particularly and apparently more rapidly on the Coasts than in the Midwest, South, and Southwest--and new, clearly understood expectations for sex role behaviors have not yet evolved to take their place. Thus, as one male administrator put it, "The rules of the game are changing and I want to play but I don't know what the new rules are."

Rapid social change also poses problems for the researcher whose focus is a problem, institution, or process at the center of that change. The most important of these are his/her own personal opinions and biases about and personal responses to the changes, and the need to protect the study's findings and conclusions from their influence. Much of URSA's prior and on-going work has involved studies in areas of topical and political importance and sensitivity, and we have found several effective ways to preserve the integrity of the study's data collection, analysis, and presentation of findings. We have attempted to use them all in this study.

First, the URSA study team was intentionally composed of both men and women; of people with varying opinions, biases, and responses regarding women's roles, the women's movement, concerns about sex discrimination, and other related issues; and people with a range of academic backgrounds and prior experience in field studies focusing both on analysis of institutions and their influence on individual behaviors and opportunities and on race and ethnic discrimination.

(Our main research team included a political scientist/urban sociologist; an urban planner/community studies specialist; a medical sociologist; a lawyer/public policy specialist; and an anthropologist/teacher trainer and curriculum specialist.) The mix of sexes, perspecitives, and experiences was designed to provide a system of checks and balances against single, strong biases.

Second, the very open-ended nature of the interviewing process (discussed in more detail below in Methods) was designed to maximize opportunities for the study's respondents to define important issues rather than pre-defining them through structured, and by definition, issue-limiting questionnaires. Third, our attempts to solicit the broadest possible range of respondents in field interviews (see Methods) was also designed to maximize opportunities for the study's respondents to define the range of issues important for inclusion in the study's focus.

Finally, so readers of this report may understand our general biases and working assumptions and interpret our findings and recommendations in that context, we present them here. First, we assume that in the absence of definitive research to the contrary, most behaviors are learned rather than a reflection of innate characteristics. Thus we assume that any barriers to women's participation in the health professions which are cast in terms of their personal characteristics as women--for example, that they are less committed to professional practice than men--are barriers which, if true, may be "unlearned". Second, we assume that institutions play a major role in defining the opportunities available to individuals and in influencing the way individuals behave. Correspondingly, we assume that social change is more effectively accomplished by changing institutions than it is by attempting to change individuals. Third, it is our observation that much federal and other public policy works on and through institutions and that it is thus consistent with our assumption that institutions are more effective intervention points for change than are individuals. Fourth, we do define women as minorities in terms of their traditionally unequal opportunities to pursue and expect the same economic and status rewards in the society that men may pursue and achieve. We are in sympathy with and support the elimination of any barriers which continue to limit women's opportunities to pursue equally with men whatever challenges and rewards the society has to offer. We include among those barriers any attitudes which men hold about women--and women hold about themselves--which suggest that full and equal opportunity to strive and compete is somehow inappropriate or undesirable. Finally, we recognize that many of the barriers to women's participation in the MODVOPPP health professions are beyond the ability either of the federal government or of the MODVOPPP schools to influence or change. Thus it is our intention to limit and focus this report as much as possible to those barriers over which both groups may exercise control.

ORGANIZATION, CONTENTS, AND USE OF THIS REPORT

This is the first in a series of ten individually-bound volumes which collectively constitute the final report of the Exploratory Study of Women in the Health Professions Schools. The ten volumes are:

VOLUME I: Part 1: DATA ANALYSIS, FINDINGS, CONCLUSIONS, RECOMMENDATIONS
Part 2: APPENDICES

VOLUME II: MEDICINE

VOLUME III: OSTEOPATHIC MEDICINE

VOLUME IV: DENTISTRY

VOLUME V: VETERINARY MEDICINE

VOLUME VI: OPTOMETRY

VOLUME VII: PODIATRY

VOLUME VIII: PHARMACY

VOLUME IX: PUBLIC HEALTH

VOLUME X: ANNOTATED BIBLIOGRAPHY

Volumes II through IX, the individual MODVOPPP professions reports, are designed to serve as an introduction to each profession and to provide an overview of the profession's history, work focus, organization, and women's roles and status in it. We conducted and prepared separate studies and reports of each MODVOPPP profession because we observed early in our research that the differences among the professions appeared significant in their implications for women's participation. Thus these volumes constitute and include the bulk of the study's individual and discrete findings. They rely liberally and heavily on direct quotes from our field interviews with administrators, faculty members, and students in schools in order to provide a vivid description of women students' experiences in the male-oriented environments of the MODVOPPP health professions schools.

The individual professions reports are designed to be read in conjunction with this report. However, they may be read alone. In anticipation of that possibility, there is a certain amount of repetition and duplication of information among the eight reports and between them and this volume.

This volume differs from the individual MODVOPPP professions reports in several significant ways. First, as the study's main final report, it discusses the study's purpose and methods in some detail. (The casual reader may wish to omit this chapter altogether or read it after reviewing subsequent and more substantive chapters in the report.) Second, as a summary volume, it includes only what we consider our most important findings. Third, it is the only volume which draws together all of the conclusions on which the conceptual models for recruitment admissions, and education called for by the RFP are based. Fourth, it presents those models and other study products including research recommendations, data gaps, and some thoughts on future trends and their implications for women.

Because it is only one of nine substantive volumes, we have attempted to contain the length of its text in several ways. We have relied heavily on the use of extensive appendices to include information on which much of the report's text is based. Interested readers can locate in these appendices the detailed information which supports and elaborates the comments and conclusions presented in the text in the form of highlights and summaries. In particular, we have placed most of the tables displaying statistical data referenced in the text in Appendix G. We have also elected to omit bibliographic citations and a prefatory literature review. Volume X, the Annotated Bibliography, is a comprehensive listing of all of the materials reviewed during the course of the study. Materials which were of particular utility are annotated there. In spite of these efforts to limit the size of this volume, it is long. Consequently we have intentionally included enough repetition from chapter to chapter to allow a comfortable reading in several sections and sittings.

Last, and with much regret, we have used extremely few direct field quotes in this report. Since the report's purposes are analysis and conclusion, field quotes are less needed and appropriate here than in the individual professions volumes where they are used as a vehicle for presenting study findings. However, we do encourage all readers of this report to sample at least one of the individual profession's reports to "experience" a MODVOPPP profession since this report will not provide that opportunity.

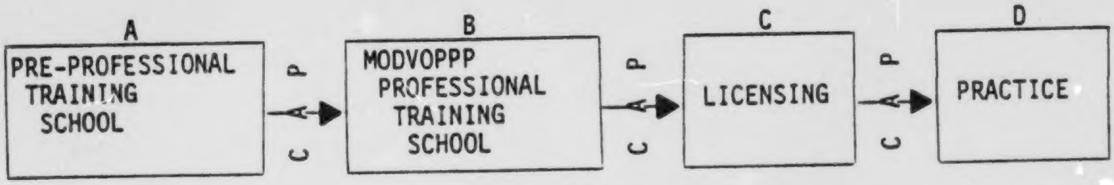
II. STUDY DESIGN AND METHODS

STUDY DESIGN

An exploratory study design was specified by the RFP for this effort. The purpose of an exploratory study is to identify and raise issues important to an understanding of a topic under investigation. The power of an exploratory study is to illuminate issues in settings and systems which are complex and where simple variables and variable clusters are inadequate to explain and establish causal relationships. Exploratory studies do not normally test hypotheses; they generate them. Thus their purpose is not to quantify the frequency, magnitude, or distribution of events or phenomena, nor do they measure statistical correlations among events or between events and characteristics of people, institutions, professions, or other categories of systems variables. Rather their purpose may often be to define complex systems through descriptive or predictive models which may be subjected to a variety of tests or evaluations in subsequent stages of research. The study's goal of developing success models for women as applicants to and students in the MODVOPPP health professions schools was thus the basis for selecting an exploratory study design.

Key features of the study's design as originally specified by the RFP included: open-ended, in-depth interviews for women and others at selected MODVOPPP schools around the country as the principal data collection method and source for identifying barriers women face as students; retrospective interviews with women students as a method for collecting information about pre-application and application barriers and problems; use of statistical data to guide the development of the study design and to suggest the best combination of schools and/or programs for site visits; and preparation of an interim report which would provide opportunity, if necessary and desirable, to modify the study based on preliminary findings.

URSA's original study design incorporated these features and added several others, the principal one of which was the development of a preliminary professional training model--or, as it later came to be called, the "CAP" model. This model as originally conceived was, in fact, quite simple. In its generic form as shown below, it consisted of the major components or steps that comprise the sequence of preparation for and professional training experiences in the MODVOPPP professions.


A
PRE-PROFESSIONAL TRAINING SCHOOL
P
C
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MODVOPPP PROFESSIONAL TRAINING SCHOOL
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LICENSING
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C
D
PRACTICE

We postulated that there might be a series of Critical Alternative Points (CAPs--hence the name CAP Model) located at various points between each step in the sequence and that each CAP represented an interface between an individual and an institution where one or the other or both might make a decision or take an action which would determine whether the individual would move on to the next step. It was our intention to develop a professional training model for each MODVOPPP profession and then for each to collect statistical data describing both the numbers and the characteristics of men and women moving through each step and each CAP. Where either the numbers of women decreased and/or their characteristics changed markedly from one step to the next, we would take that as preliminary evidence of possible de facto discrimination and examine what policies, persons, attitudes, institutions, programs, or other components at that step might account for the change--that is, might be a barrier or be responsible for some form of discriminatory action. Thus the model had as its purposes:

- to serve as a preliminary basis for identifying and models structuring data collection needs including identification of desired statistical demographic and performance data on men and women applicants and students; guidance for interview instrument design; and guidance for designation and review of written materials and documents;
- to serve as a framework and model for analyzing data; and
- ultimately, to serve as the possible basis for the models required by the RFP for encouraging women as successful applicants and students in the MODVOPPP professions.

Three additional features of URSA's original study design included: first, a nation-wide mailing to all MODVOPPP schools requesting certain statistical data designed both to assist in the selection of school sites for inclusion in the study and identification of key CAPs for investigation and analysis; second, the addition of group interviews with women students as a further on-site data gathering technique and also as a means for identifying particularly articulate and/or sensitive respondents for individual interviews; and third, the addition of substantial numbers of interviews with school administrators, faculty members, and some male students in order to provide multiple, reinforcing and conflicting points of view about women and women's reports of experiences and barriers in the school and thus hopefully shedding light on the core issues.

The study design and data collection plans as they were finally implemented changed in some significant ways from the original plans. For several reasons we did not conduct the nation-wide mailing to MODVOPPP schools soliciting applicant and student demographic and performance data. These reasons included Office of Management and Budget (OMB) delays in review and approval of our request to do so; concern among some of the MODVOPPP educational associations that the request would represent an undue burden on schools already subject to heavy requests for data reporting; and the probable inability of many schools to respond to the request in time or with the data desired. Thus we turned to secondary sources--federal agencies and the MODVOPPP professional associations and educational associations--for the data we needed both to select school sites for field visits and to attempt to identify those points in the CAP model where changes in the numbers and characteristics of women applicants and students passing through the sequence of steps suggested points for intensive research and examination. Adequate data was available in most instances to select an original group of 16 to 20 MODVOPPP schools which displayed the range of characteristics in which we were interested and which we thought might have relevance to women's experience in MODVOPPP schools: urban/rural geographic location; public/private organization; free-standing/university affiliated; physically independent/ part of a medical center/part of a campus; high status/low status within the profession; variation from the national average for the profession on the percentage of women enrolled. With the exception of medicine, and to a certain extent dentistry, we were not able to obtain the data we desired to support the CAP analysis. (See discussion of data availability and data gaps below in Appendix F, Data Gaps, Sources, and Needs.)

Early field research and our interviews with administrators, faculty members, and students also suggested limited utility to the CAP analysis as originally conceived. Preliminary study findings indicated that key differences between men and women students and their experiences as applicants and as students in the MODVOPPP schools would not necessarily show up in statistical differences even if the necessary data were available. For example, recent attrition data in medicine shows no significant differences between men and women students during the three or four pre-clinical/clinical years involved in medical school training. Yet conversations with men and women students in medical schools suggested women face a variety of special problems during training ranging from nuisance factors such as being regarded by patients as nurses to significant learning losses when segregated physical facilities in training hospitals deny them the opportunity to participate in pre- and post-operative "raps" or discussions about operating room procedures, operating techniques, and so on with resident supervising surgeons. Thus, although the CAP model's usefulness was limited by the absence of adequate statistical data as cues to possible barriers, we used the model to focus our research on the individuals and institutions, policies, programs, and facilities involved in each stage of the professional training sequence which are a part of and may influence men and women students' experiences at that stage.

Preliminary analysis of such statistical data as was available for all of the eight MODVOPPP professions and conversations with key informants and respondents in our field visits also indicated that the differences among the professions which might be significant for women as applicants and students were far greater than would probably be revealed by the simple tailoring of the formal professional training sequence or CAP model for each profession. While a full-scale and intensive study of each profession's history, organization, associations, political networks, trends, economic bases, and so on was deemed neither feasible nor probably necessary within the confines of the study, nonetheless it was clear that much more attention to and study of these issues would be required than originally anticipated.

Early field research also suggested that additional interviews with men students would be necessary if the study were to discriminate among those issues, experiences, and perspectives raised by women which were uniquely theirs as opposed to those shared by all MODVOPPP students as a function of their student status or those shared by young people as a function of their youth and generational differences. Our early core research team of five did include one man, and our early study design did include interviews with male students. However, since we typically matched our male interviewer with male faculty members and certain male key administrators, one male field team member was limited in the number of male student interviews he could conduct. Thus the need to add one or more additional males to the study team became apparent. Additionally, as the power of the group interview technique to rapidly surface a range of issues became apparent, it seemed desirable to try this technique with groups of men students as well as with women and with mixed groups of both men and women students.

Finally, our early field research also indicated that two additional changes to the study would be useful. First, the number of schools originally planned for on-site visits limited the range of institutional types and locations which could be covered given our starting assumption that at least two schools in each of the eight professions should be included among the study sites. Thus an increase in the number of schools seemed desirable. Second, our early field research indicated that it would be desirable to expand the study's population from students in the MODVOPPP schools to include some interns and residents in appropriate professions where possible. Reports of difficulties women encountered during clinical years in training suggested that some of the greatest problems and resistances women might face in professional training occur not in the MODVOPPP schools themselves but in related training institutions--hospitals, preceptorships with practicing clinicians, and so on--where women are fewer in number than in the schools and where the schools have little or no control over the policies, practices, facilities, and individual behaviors and attitudes of key groups in those settings.

These needed and desired changes were for the most part incorporated into the study's overall design when preliminary findings were prepared and reviewed as part of the study's required interim report. In summary, the study design was modified to:

- add the male staff necessary to conduct additional male student interviews both individually and in groups;
- include a limited number of interns and residents in appropriate professions as study respondents scheduled for individual interviews;
- increase the number of schools for on-site visits to 27; and
- study each profession more intensively than originally anticipated.

DATA COLLECTION

Literature and Materials Review; Instrument Development and Test

The first several months of the study we devoted to intensive literature and materials searches (see Annotated Bibliography, Volume X), an effort which continued at a reduced level of effort throughout the study. We reviewed available studies and literature on the MODVOPPP professions in general and on women in the MODVOPPP professions in particular; on the sociology of professions and occupations; on the socialization and role definitions of women; on current trends and issues in health education and health care delivery. We reviewed pertinent federal legislation and regulations involving non-discrimination provisions in education and employment; health manpower legislation and programs; and federal procedures, requirements, and involvement in school accreditation. We reviewed MODVOPPP association and individual school brochures, catalogues, and other publications describing aptitude tests and testing services, centralized application services, special (minority) recruiting and compensatory education programs, financial aid programs, and other materials in order to prepare a preliminary professional training model for each of the professions outlining the main steps in the professional training sequence and the formal requirements necessary to pass into and through each step in each profession.

We used this period to locate and obtain available statistics and empirical studies on demographic characteristics, qualifications, performance, and activity patterns on applicants, students, and practitioners in all of the MODVOPPP professions. (See Appendix F, Data Gaps, Sources and Needs and Appendis G, Tables.) We also used this period to identify, meet, and--on an informal basis--talk with key informants involved either in sex role research in general or research on women in certain of the MODVOPPP professions in particular.

Based on information collected through these activities, we developed our field data collection instruments including interview guidelines for administrators, faculty members, and students; instructions for conducting group interviews and topic/questions for them; and guides for requesting and collecting applicant, student, and faculty statistics and written documents from the schools we were scheduled to visit. Consistent with the study's exploratory emphasis and design, the interview instruments were open-ended, topical guidelines designed to provide minimum definition to the interview by the interviewer and maximum opportunity for the respondent to raise and comment on the issues and topics s/he considered important.

In general, the individual interview guides were organized around the professional training sequence and asked all of the different respondent groups to comment on the same core set of issues--what formal and informal requirements must be met at each step in the professional training sequence to pass on to the next; what choices the institution/the student makes at each step; factors influencing and limiting those choices; whether and how men and women students differ in their demographic characteristics, reasons for selecting the profession, performance and abilities, career choices and plans, and special needs and problems, if any. Our purpose in asking all respondents to comment on a core set of issues was to identify points of conflict and consensus as mechanisms for isolating issues for further investigation as well as issues for analysis.

Beyond the common information solicited by the interview guides, the guides for faculty members and administrators emphasized the collection of information about school history, organization, and facilities; recruitment, admissions, and educational policies, programs, requirements, and services; trends, problems, and conflicts in the schools and in the profession; and attitudes about women as students and professionals. Guides for faculty women included additional emphasis on their own experiences and perspectives as women in the schools and the professions. Guides for students emphasized the collection of demographic data; information about the persons, events, and other factors influencing their choice of the profession and the school; information about their experiences and problems as applicants to and students in the school; and perceptions of the profession and its members now that they had a relatively close-up view of both. Guides for male students also included probes to determine their attitudes about women as students and colleagues in the schools. When the study design was modified to include select interviews with interns, residents, and administrators in training hospitals, and clinics in appropriate professions, we used the same procedures and the initial field instruments as the bases for developing interview and materials collection guidelines for these additional respondents and sites. (The interested reader may review both sets of field instruments in detail in Appendix B, the Method Appendix to this report. Exhibit C includes the original field research instructions and instruments used for MODVOPPP school field visits. Exhibit H includes interview guidelines for Interns and Residents.)

Student, administrator,and faculty interview instruments were tested informally on a small number of volunteers identified through our key informants, and we used the results of these tests both to modify the guidelines and to sensitize field staff to interview techniques and probes appropriate to open-ended interviews. We began our formal field data collection effort as soon as we received OMB approval to conduct school site visits--six months into the study.

Field Site Visits

Based on several institutional and geographic characteristics we cited earlier, we selected 27 MODVOPPP health professions schools for on-site field visits with the larger professions including more sites than the smaller ones. Thus of the 27 schools, nine were medical schools, five dental, three pharmacy, and two schools were included for each of the remaining professions. Alternate institutions were identified in the event that any of our first choice schools were either unwilling or unable to accommodate a field visit. That eventually never occurred. (See Exhibit B in Appendix B for a distribution of schools visited by profession, institutional, and geographic characteristics. Exhibit G in Appendix B describes the criteria for selection of intern and resident training sites visited in the study.) We visited 18 of the 27 schools in the spring of 1975 and the remaining nine in the fall. All visits to training hospitals and clinics to interview residents and interns were conducted in the summer of 1975.

Schools were initially contacted and invited to participate in the study by letter. Each school's chief administrative officer received a letter from the DHEW Assistant Secretary for Planning and Evaluation (Exhibit A, Appendix B) briefly describing the study, introducing URSA, requesting the school's cooperation in hosting a visit, and assuring the school of complete confidentiality and anonymity in all written and oral presentations resulting from the study. The Assistant Secretary's letter was always accompanied by a letter from URSA describing the purpose and estimated length of our desired visit; the types and number of administrators, faculty members, and students we would like to interview and the estimated time required to interview each; the kinds of materials and statistical data we wanted to collect; and one or more suggested dates for the visit. We placed follow-up telephone calls a week or two later to confirm the visit and make specific visit arrangements.

Site visits normally averaged two to three days per school and were conducted by a field team composed of four or five men and women. Our first interview was always with the chief administrator and normally included the entire field team--at least for the first portion of the interview. Additional administrator interviews were usually conducted with Assistant Deans of Students, Admissions, Curriculum,and Faculty Affairs or their equivalents; Financial Aid Officers; Affirmative Action Officers; Registrars; members of any official committees on the status of women; and when available, counsellors, ombudsmen, and other administrators with responsibilities for student services. We conducted interviews with both pre-clinical and clinical faculty members with preference and emphasis given to department and committee chairs; members of admissions committees; clinical faculty members who were also therefore members of the profession; and women faculty. Interviews ranged in length from as little as an hour to as long as five hours. The average interview was approximately one and a half hours long.

Selection of administrators and faculty members for interviews typically occurred in one or a combination of several ways. In our initial letter to the chief administrator and in the follow-up telephone call we specified the types of people we would like to interview and requested the chief administrator or his designated study representative or liaison to select and schedule appropriate people for our interviews. In institutions where we knew or knew of administrators or faculty members who by reputation or reference were considered as potentially insightful and articulate informants, we requested their inclusion in our interview schedules and/or made our own arrangements for interviews but always with the knowledge of the chief administrator or study liaison. Finally, during on-site visits people we interviewed frequently recommended other members of the faculty or administration as good informants, and whenever possible, we pursued these suggestions with interviews. Regardless of the method of respondent selection, our objective was always to secure the broadest possible range of opinions and perspectives by including for interviews individuals reflecting a variety of positions, authorities, and responsibilities in the schools.

Arrangements for student interviews were also made in several different ways. Whenever possible, we scheduled one or more female, male, and/or mixed sex group interviews early in our field visit and used the group interviews to identify articulate and thoughtful students with divergent points of view for subsequent individual interviews. Group interviews were occasionally scheduled by the school study liaison and either announced in classes or, in one instance, set up for required attendance. Normally, however, the school's study liaison would identify a student in each class--or, if URSA had contacts or acquaintances in the school, we would identify a student--who would take responsibility for convening and publicizing the group interviews. Groups interviews normally averaged two hours in length and included anywhere from four or five to eleven or twelve members. We conducted multiple group sessions whenever we could constitute a group of a single class or class of five or more members and whenever necessary to limit the size of a group to no more than a dozen people in order to maximize opportunities for each participant's contributions. (Exhibit C4 in Appendix B describes in some detail both the procedures for convening and conducting these group sessions and the several topic/questions which we used in them. Exhibit F summarizes by profession and by type of group--male, female, or mixed sex--the number of group interviews we conducted during the study and the estimated number of students who participated in them. Appendix C includes a summary of the issues raised in these group interviews and compares the issues by profession and by sex. Many of the issues surfaced and discussed in the group interviews are among the findings presented in the next chapter and constitute the bases for many of our conclusions and recommendations in later chapters of this report.)

Individual student interviews were normally conducted with participants in the group interviews who were either interested volunteers or, as indicated earlier, people we invited for further conversation because they represented divergent and thoughtful perspectives and points of view. Individual interviews were also frequently conducted with students who were unable to attend group sessions but who were suggested to us either by students we interviewed or by faculty and/or administrators. Individual interviews averaged an hour and a half in length and ranged from just under an hour to very often two or two and one half hours.

In all of our field visits and interviews we used several standard techniques and procedures designed to assure maximum reliability, utility, and confidentiality of the interview data we collected. First, in the written and verbal descriptions of the study and its purpose which we presented to the administrators, faculty members, and students in the schools we visited, we intentionally omitted reference to or suggestion that the study's tasks included an effort to describe any discrimination women may experience as applicants and students in these MODVOPPP professions. In so doing our purpose was neither to mislead respondents nor obscure the study's purpose but rather to ensure that we did not define and thus limit the scope and boundaries of study data prematurely. Second, we verbally assured all respondents both of their school's and their own personal anonymity and confidentiality as study participants. Midway through the study new federal Privacy Act requirements became effective and from that point forward we also gave to each of our potential respondents a one-page confidentiality statement (see Appendix B, Exhibit D) assuring them of this confidentiality and also that their participation was entirely voluntary with no adverse consequences resulting from non-participation.

Third, in almost all instances we tape-recorded our individual and group interviews in order to assure complete and accurate reporting of the content. However, prior to recording any interview we both requested taping permission from the respondent and also pointed out that we would temporarily or permanently cease recording at any time s/he wished. In many instances we did receive and comply with such requests. And in one school we complied with the chief administrator's request that no tape recording be done at all in any interview at any time. Fourth, we instituted a series of school codes which we utilized both to identify our field notes and the tapes from our field visits. We normally identified respondents on notes and tapes by position, sex, and if students, year in school. In the case of students, we normally did not ask or know surnames. Finally, field interviewers were under strict admonitions not to discuss or reveal other schools included in the study--an admonition often difficult to observe in the small professions such as osteopathic medicine and podiatry where everyone knows everyone else and even apparently casual comments about another school visited might reveal its identity to one familiar with all of the very few schools in the profession.

Exhibit E in Appendix B summarizes by profession and by type of respondent the almost 600 field interviews we conducted with administrators, faculty members, students, interns, and residents. At an average of one and a half hours in length, these interviews represent approximately 900 hours of field data. At an average of two hours in length, the 62 group interviews we conducted represent an additional estimated 125 hours of data. The combined total of over 1,000 hours of interview tapes and notes represent the bulk of the data subjected to analysis by the research team and supplemented by the additional data and information generated by the study's material and literature reviews and by analysis of available statistical data on MODVOPPP applicants, students , and practitioners.

DATA ANALYSIS

Focus

Data analysis of materials and interviews represented a continuing study effort. However we began this task in earnest in the summer between the first and second round of school field visits and while we conducted our interviews with interns and residents. We conceived of the task as one of examining the key features and inter-relationships of what we considered to be the three major systems variables involved in the study: sex, professions, and schools.

Sex--or the social definition and expectations by self and others of what it means to be a man or a woman in this society--was an obvious concern. It was, after all--or at least it could be considered--the central topic of the study. Much of the literature we had reviewed on sex roles and socialization insisted on the significance of differences between men and women's behaviors, attitudes, and other personal characteristics as both cause and consequence of many other interesting and important social, economic, political,and organizational phenomena--even if that same body of literature and research was--and it is--inconclusive about why and how the differences occur and how pervasive which, if any, may be. In addition, our field interviews with all of our respondent groups revealed many differences in opinions about and experiences as men and women applicants and students. So for all of these reasons, a focus on sex or sex roles as a key issue or variable for analysis was an obvious and necessary choice.

An analysis of each of the professions and certain of their work, economic, and organizational features represented the second major set of issues for analysis for two reasons which became rather quickly apparent in the study. First and most obviously, beyond the fact that all of the MODVOPPP professions are health--and thus science-based professions--they vary greatly in ways which we considered might have significance for women as applicants to and students in the schools. As the MODVOPPP professions Volumes II through IX of this report make clear, they vary in size and complexity--in numbers of practitioners, students, schools, specialties, related training institutions such as teaching hospitals and clinics, and in professional and educational associations, programs,and activities. They vary in visibility and in the general public's knowledge of what they are and what they do. Some are regarded as high status professions while others, in the public view, are more often thought of as a good occupation or a good business. Some, in fact, are more often practiced as a business and in an entrepreneurial business form such as solo or partnership practice while others may be more often practiced in the role of employee in an employer institution. Variations in the organization, focus, length, and cost of professional training are also great. Finally, and interestingly, the presence of women as practitioners and students, both historically and currently, varies enormously among the eight MODVOPPP professions, and some are much more heavily sex-typed than others.

Second, with all these differences, they shared one highly salient feature in common. Although the MODVOPPP professions vary on degree of sex-typing, all of them are heavily sex-typed male--meaning, when you think of them you normally envision a man--and they are in statistical fact predominantly male. Thus to try and understand why women are not in them--and until very recently have not been very much among the applicants seeking to get in them--suggests an analysis of the professions themselves--their organization, work, history, and members.

The third major focus of our data analysis efforts were the MODVOPPP schools themselves. An examination of their key features and an attempt to profile the schools through a series of institutional, case study analyses was the logical outcome of several considerations. First, the schools are the only and exclusive route to professional status available to professional aspirants. Self-study, prior work experience, and/or apprenticeship programs, for example, are not available alternatives. It is through the schools that the professions select and train their new members, and it is through the schools that the professions' leaders and current members exercise many of the influences and controls they do on the characteristics and professional commitments, interests, loyalties, and concerns of those new members. Thus it is in the schools and in their policies, practices, programs, facilities, personnel, requirements, and other features that applicants and students might reasonably encounter barriers to our limits on professional access and success.

Second, as the only access route to the professions, competition for entrance and acceptance is keen. Professions and schools within professions vary in this regard, but in general requirements and standards for admission are uniformly high as are the qualifications of the men and women applicants seeking admission. The training requirements after admission are correspondingly rigorous; competition among students generally continues to be a feature of the training experience; and in general the years of formal schooling are characterized by a stressful, anxiety-laden environment. These features of the admissions and education processes are in themselves--or may be--a set of barriers to some.

Third, since it is to the schools that aspiring MODVOPPP professionals apply, and in the schools that they receive much of their training and education, an analysis of the schools' organization and operations in relation to women's experiences as applicants and students was an obvious starting point for developing the study's success models for women in the MODVOPPP health professions. HEW access to the schools through various federal funding mechanisms and programs also provides a useful variety of ways in which school-based models can then be tested ranging, for example, from pilot demonstration programs to compliance requirements with grant and contract conditions.

In our analyses of women (sex), professions, and schools, it was our purpose to narrow the focus of our examination primarily and only on those features of each which have important consequence in relation to one another rather than including all of those which might be of interest--of which there were and are very many. Also, even though the study was not designed as a quantitative effort capable of describing the incidence, magnitude, or distribution of events, characteristics, or other phenomena under examination, we wished to utilize our data--and particularly our interviews with men and women students--in ways which would permit us to comfortably offer our impressions of them as accurate descriptions of many of today's MODVOPPP students rather than as unusual and/or isolated cases. In other words, without actually categorizing and counting students' characteristics or their reports of events, experiences, and other phenomena, we wished to be able to indicate what we considered to be pervasive findings and trends of possible consequence for the future as opposed to limited and/or inconsequential incidents and observations. Finally, we also limited and guided our analysis by considerations regarding what immediate and direct programmatic or policy utility and applicability our findings might have for HEW, the MODVOPPP schools, and/or the MODVOPPP professional and educational associations.

Thus, based on these several considerations, we did not isolate for close analysis a fair number of standard sex (demographic and other personal descriptors), profession, and school variables or characteristics, and we did not continue to pursue some initial study hypotheses we had formulated based on very early field work and literature reviews. For example, the criteria we used for selecting and including particular schools in the study group reflected our initial assumptions that some or all of them might have differential significance for women's experiences as applicants to and students in the schools. Some, however, are not readily subject to influence and change by federal, school, or association action--for example, public/private funding, university affiliation/free-standing organization, research/technical training orientation--so we chose to spend little if any time trying to determine the impact of these instituttional variables on women's experiences and rather looked to other features of the schools which are subject to change and influence as the basis for developing both the recruitment and education success models and for intervention recommendations.

Similarly, we had early formulated an hypothesis that women, minorities, and other non-traditional candidates to the MODVOPPP schools would be viewed as less desirable future members of the profession by professions involved in struggles for economic and political survival in general or, if one of the small or less prestigious and less powerful professions such as osteopathic medicine, podiatry, or optometry, *vis-à-vis* medicine in particular. Thus we considered that inter-professional conflicts and struggles for survival and control over certain spheres of competing work claims (as, for example, between optometrist and ophthalmologist) might explain the absence of women and minorities from certain of the professions or at least correlate with trends in their participation over time. While we considered this an intriguing line of inquiry, we finally abandoned it for several reasons. First, some of our data simply didn't fit the theory. Dentistry, for example, has not been involved in recent or current struggles for survival yet has relatively few women. Podiatry is a profession which experienced severely declining enrollments in the late 1950s and early 1960s and might have disappeared but for the timely availability of major sources of federal funds on which it relied and relies heavily for survival. Yet podiatry is a profession whose leaders are, in our judgment, among the most enthusiastic about increasing the number of women in the profession--in part because some acknowledge that women represent an untapped potential applicant pool which offers the profession a source of highly qualified candidates and a basis for the growth which federal capitation monies to schools with increasing class sizes in the last several years have encouraged. However, a second and ultimately more important reason for dropping the "professional struggle for survival" hypothesis for analysis was its limited apparent utility either for developing recruitment, admissions, and educational success models for women or for suggesting clear direction for federal, school, and/or association policies and programs useful in encouraging women as MODVOPPP school applicants and students. Other hypotheses were subjected to the same scrutiny and eliminated from final discussion for similar reasons.

Data Analysis Approach

We used a series of mutually reinforcing and overlapping procedures for data reduction and analysis. Members of the research team were each assigned responsibility for research and analysis of one or more professions. Because of its size, medicine was shared by two people. Whoever was responsible for a given profession was also and by definition responsible for preparing the field team for visits to schools in that profession; being the field team leader defining data needs and unexpected leads for follow-up on-site; and assuming responsibility for analyzing all of the data--written, statistical, and interview--generated in those school site visits. In addition, each staff member had one or more substantive research responsibilities cross-cutting professional lines and including federal legislation regarding non-discrimination, affirmative action, financial aid, and health manpower financing; literature on the history and sociology of professions; and the accreditation process and its relationship to school operations.

Throughout the study we held frequent staff sessions as a primary vehicle for sharing data and insights obtained through literature and data reviews; through informal conversations with contacts in schools, the professions, and among people doing research relevant and related to the study; and ultimately through field visits. During field visits we also made an effort to schedule frequent "debriefing sessions" among the field team members to share leads and suggestions generated in individual interviews which all or particular other members of the team should pursue with their respondents, to assess information we had thus far gathered, and to outline issue direction rest of the visit. Beyond the obvious planning and information-sharing purposes of these meetings, they had others.

First, staff sessions served as one method for building a commonly-shared and understood set of analytic concepts and data needs among the team members. Thus, in lieu of highly structured data gathering and analysis instruments, they were a technique for creating comparability of perspective among the team members who did field interviews and later data analysis. Since much of our data analysis involved reviewing hundreds of hours of taped interviews and selecting for transcription only those or portions of those which were especially rich in information content and insight, we used some staff sessions specifically for the purpose of listening together to several interviews to assure that we were all listening for the same issues and "hearing" the same information. We used other sessions to share what we had each heard from individual analyses of pre-selected interview tapes.

Second, through discussion and debate we used the staff sessions as a screen for sorting and selecting among the study findings and notions those which were merely interesting and those which were also useful to our purpose. Third, since staff members had individual professions' assignments, staff meetings were one means of educating everyone about all of the professions and at the same time providing an opportunity to compare and contrast the professions along dimensions of emerging importance for women. Similarly, staff meetings served as the principal means for comparing and contrasting the individual schools we had visited and developing characteristics and profiles which we could relate to different sets of experiences women reported as applicants and students and thus as the basis for our recruitment and success models.

Finally, we also used staff sessions to highlight, compare, and contrast major characteristics of the more than 400 men and women students we had interviewed in eight different professions and 27 different schools. In the absence of a structured survey of the students' demographic characteristics, performance and qualifications, and opinions and experiences regarding choice of profession, choice of school, experiences as an applicant and student, expectations and plans regarding future professional practice, and so on, we used staff sessions to surface and assess major and pervasive profession and school-wide themes and apparent dominant issues and trends.

As a result of our data reduction and analyses efforts, we developed several intermediate study products or materials on which the findings, conclusions, recommendations,and volumes of this final report are based. Each staff member initially prepared a rough working paper on his/her profession(s) utilizing principally available literature, journals,and statistical data. These papers served as background to our field visits, background for field interview and materials' data analysis, and later as the basis for preparing portions of Volumes II through IX, the individual professions volumes of the final report.

Next we prepared a series of institutional profiles or case studies on each of the 27 schools we visited during the study. We analyzed in the order listed the following primary data sources for these studies: school catalogues, brochures, policy memos, and other documents; whatever statistical data we were able to obtain on applicant, student, and faculty characteristics; the tapes and notes of individual interviews with administrators and with male and female faculty members; the tapes and notes of group interviews with male students, female students, and mixed sex groups; and finally the individual interviews conducted with male students and with female students. (Exhibit I in Appendix B includes data analysis guidelines, instructions, and rationale; coding or "listening" categories for student interviews; and the report outline for writing each case study.) Unfortunately these case studies are not available and will not be available as independent study products due to the assurances of confidentiality and anonymity we guaranteed all participating individuals and institutions in the study. In most cases, sufficiently altering identifying information about the schools and/or individuals in them would also seriously alter the significance and importance the data has to an overall understanding of the institution and its history, policies, and "environment" as experienced by the students there--both men and women.

We also prepared several substantive working papers on sex-role research; data gaps and availability; financial aid; accreditation; and the roles and participation of women in the MODVOPPP professional associations and journals. We researched the accreditation process for purposes of determining whether it offered any actual or potential intervention points for encouraging women as applicants and students in the schools. We conducted a brief study of the roles and participation of women in the MODVOPPP professional associations and journals because, with the exception of medicine and to a limited extent dentistry, we were unable to find much data descriptive of women's participation in professional activities. And, as we discuss later in the findings chapter of this report, we believe that professional activities are an important indicator of ultimate success in a profession. The working paper on financial aid is the core of Appendix D to this report, Financial Aid. Appendix E, Women in the Professional Associations, presents the methods and results of the research on women's professional activities in the MODVOPPP professions. Appendix G is composed of the more important of the tables we either located or generated in our statistical data search, and as noted earlier, a discussion of data sources, gaps, and availabilities is presented in Appendix F.

All of these intermediate materials served as the final set of data sources we used to conduct the last two tasks necessary to identifying and formulating major findings, conclusions, recommendations, and success models. These tasks were the development of working definitions, indicators, and measures of key concepts involved in the study, and a refinement of the professional training or CAP model for use in developing and presenting our key findings and the success models for women.

WORKING DEFINITIONS

Key Concepts

The study is concerned with developing equal opportunities for success for women as applicants to and students in MODVOPPP health professions schools. It is concerned with an identification of barriers to success and a description of the discrimination process, if any, which limits women's entry into these health professions. Thus in order to develop success models and suggest intervention points and strategies effective in creating equal opportunities for women, working definitions of the terms "success," "barriers," and "discrimination" were needed.

The RFP does not define these terms and notes, in fact, that with respect to discrimination, it "...is not a process which readily lends itself to measurement; many differ even as to its definition." The opinions and views of people we interviewed in our school visits similarly provided very little basis for definition since their points of view varied widely depending on who they were. For example, most administrators or clinical faculty members in schools described the successful student in terms of grades, commitment to/involvement in (student) professional activities and associations, selection of a specialty or career track compatible with the particular school's focus--for example, rural or community practice, research and education, etc. The male students often defined success in terms of doing well academically and managing to withstand the pressures of academic competition while also still having time to maintain personal and social relationships. Women students typically defined success as being judged on their professional abilities and qualifications, rather than on the basis of their sex, while still being able to maintain their femininity in the masculin environments of the MODVOPPP schools and professions. There were yet many other definitions.

For purposes of this study, we have chosen to define success in terms limited by and consistent with HEW's concern with (and authorities for assuring) equal educational opportunities. We define success simply as equal access--equal access to the MODVOPPP applicant pools, to (admissions to) the schools themselves, to the educational training and professional socialization which occurs in the schools and is their purpose, and ultimately to full participation in the profession.

Barriers we define as whatever has the power to interfere with equal access--with success. Thus barriers may and do include the presence or absence of structures, policies, programs and services, practices, facilities, and attitudes and behaviors which have the effect or consequence of limiting or denying access. The barriers may operate singly or in combination; they may and do exist in many institutions including the MODVOPPP schools themselves, the professional and educational associations, the professions as communities of practitioners, in federal and other public programs and policies, in pre-professional schools, and clearly in the society at large including families, friendship networks, written and electronic media, and so on.

Discrimination we define as the consequence of the operation of such barriers when they have the weight of institutional, official authority behind them. It is the outcome expressed in unequal access. It focuses on consequences and outcomes, not on intent. It is a working definition for purposes of understanding the operation of the barriers more completely; it is not a legal definition.

All of these definitions focus on and center around the notion of equal opportunity and equal access, and equal access can be assessed or identified through a set of relatively simple indicators. If sex (male or female) is not a factor in access--or, if it is a factor of decreasing importance over time--then two generic kinds of measures and criteria will suffice to identify equal access. First, statistical descriptors of the proportion and characteristics of men and women in applicant pools, among admitted and graduating students, in various specialties and practice settings, and involved in professional activities and rewards such as association officerships and so on should show decreasing difference over time. Second, reports by men and women of their experiences--both positive and negative--in considering professional training, applying to MODVOPPP schools, as students in the schools, and ultimately as practitioners should be increasingly similar over time rather than representing substantial differences as they do now. For women in particular we would expect to hear fewer reports of pre-professional counsellors, teachers, and others discouraging them from considering professional training; fewer reports of unfriendly admissions interviews; fewer reports of lost learning opportunities in schools and related teaching institutions due to inadequate facilities; and more reports of clinicians and practitioners, both men and women, who serve as role models and mentors influencing their professional, specialty, and practice decisions.

Two other terms used in this report which were frequently used by respondents in field interviews and which are found in various forms in much of the literature on women and discrimination require definition. By sexism or sex-bias we mean simply the attribution or assumption of differences in personal characteristics and abilities based on gender which results in differential treatment of women--usually to their detriment. The terms male-oriented or male-dominated when used to describe the professions or the schools mean simply that men represent a numerical majority; that they occupy most important decision-making roles and therefore hold most of the power to allocate institutional resources, set priorities, and create policies; and that as a natural result the operations of the institutions reflect their interests and concerns.

The Professional Training Model

The professional training model used in this report is composed of the generic sequence of steps involved in application to, education in, and practice in the eight MODVOPPP professions. Specific discussions of any unique steps, particularly important issues, and/or the individual sequence of steps involved in each of the professions is provided in the individual professions reports, Volume II through IX. Here we have consolidated those individual models into one which forms the basis for organizing and presenting our key findings with focus on the particular institutions, individuals, policies and so on which represent barriers to women at each step. It also serves as the basis for the recruitment, admissions, and educational models developed for encouraging women's success in the MODVOPPP professions. The key components of the generic professional training model include the following.

Recruitment/Application

Recruitment and application involves the institutions, formal and informal activities, influences, and decisions which result in an individual being in a profession's applicant pool--or not. It includes, therefore, formal recruitment activities sponsored by the profession's various associations, by schools, and by individual practitioners acting on behalf of the profession. It includes formal counselling programs and information in preprofessional schools whether through organized student groups such as pre-med, pre-vet, and pre-dent clubs or through school-sponsored "career days" and other means. It includes the informal encouragements and discouragements that young people receive from parents, peers, family practitioners, and others when considering application to one or more of these professions. It includes other forms of encouragements and discouragements such as an individual's knowledge and personal assessment of the profession, however accurate or inaccurate and based on whatever sources including, apparently for some of our respondents, media images and presentations of the practicing professional such as Marcus Welby, MD. Recruitment/application is a multi-faceted process involving the interaction of many people, many institutions. Our principal focus is on those which are ultimately subject to influence by the schools and the professional associations.

Admissions

Admissions involves principally the formal and informal requirements and procedures which the MODVOPPP schools establish and use to screen, narrow, and ultimately select from among their applicant pools those candidates considered desirable for future membership in the profession. Admissions is, from the individual applicant's point of view and, in a sense, from an overall system's point of view, the key access point in the entire professional training sequence. Our findings indicate that MODVOPPP schools and professional associations do have the ability to influence to some degree the number and characteristics of the individuals in their applicant pools. However, schools have enormous control over the characteristics of the individuals selected as MODVOPPP students from those pools through the requirements and screening procedures used in admissions. The professional and education associations also play an active and substantial role in admissions through the aptitude tests and centralized admissions services some provide their member schools.

Applicants, too, exercise choice in the admissions process. They select the professions and the school whose invitation to enroll they will accept. If they have applied to more than one school and--with the exception of applicants in veterinary medicine whose schools limit severely the number of out-of-state students they will accept--almost all do, the individual determines the school in which s/he will enroll if accepted in more than one. In some instances that decision may also involve selecting which MODVOPPP profession will be theirs since some applicants apply to schools in several of the professions in case they are not accepted in their first choice--which is typically medicine in these instances. Basically, however, admissions is that step in the professional training sequence heavily controlled and dominated by the professions and especially by the schools.

Pre-Clinical/Clinical Training

Pre-clinical and clinical training includes the formal and informal educational curricula and teachers involved in educating and socializing MODVOPPP students in the necessary knowledge, skills, and appropriate behaviors for their chosen profession. This step varies in length, content, and organization by profession and frequently among schools within a profession. It may also involve the cooperation and use of personnel and facilities from other institutions--hospitals, clinics, active clinician's practices in preceptor arrangements. For all professions, however, it is the basic training period and for those with no, little, or only recent emphasis on specialized training, it constitutes the only formal pre-practice training period. Student experiences during this period are most directly influenced by school policies, procedures, facilities, and personnel, and these are all key issues for examination as potential barriers to women's success as students.

Postgraduate Training

Post-graduate training is that part of the professional training process which prepares the MODVOPPP school graduate for some form of specialized practice. It is that period of training we normally call internship or residency. It is an essential and integral part of training in medicine and to a lesser degree, in osteopathic medicine, and follows immediately upon graduation from the pre-clinical/clinical years for most students. In other professions few students, if any, specialize, and specialty training is often separated from pre-clinical/clinical training by some years of practice as is common both in dentistry and veterinary medicine. MODVOPPP schools have relatively little direct control or influence over the post-graduate training experience since training occurs in hospitals, clinics, and preceptor settings either totally or--in the case of university teaching hospitals--administratively unrelated to the schools. Our analysis of this period of professional training is somewhat limited since it was not a major nor an original focus for research in the study.

Professional Practice

Professional practice includes the choices practitioners make regarding type of practice activity (research, teaching, patient care, etc.), form of employment (solo, partnership, employee), and level of activity (part-time, full-time, inactive). It includes the choices they make regarding involvement in professional activities including participation in local, state, national,and specialty associations; research and authorship for journals; attendance at meetings and conferences; and so on. It includes the rewards they receive, both financial for practice activities, and honors and prestige for their professional activities. It includes their relationships to other practitioners both formally and informally or socially. It is a period in the professional recruitment, training,and practice model which was not included in this study but which we have looked at briefly since professional practice is the ultimate objective of most applicants to the MODVOPPP professions,and the creation of skilled pratitioners is the goal of the MODVOPPP schools. Our examination of professional practice is largely cast in terms of students' expectations and anticipations about that period and in several hypotheses we have developed about outcomes and problems for women in professional practice which reflect their social roles as women and the cumulative impact of their experiences during the early stages of the professional training sequence.

FINDINGS AS A BY-PRODUCT OF THE STUDY'S METHODS

Before we proceed to a discussion of the study's major findings, we wish to briefly note some which were major by-products of the study's methods and of interest in themselves. First, we have already noted--and an entire Appendix (F) in this report is devoted to the fact--that much of the data which would be useful for research on women in the MODVOPPP health professions (and for federal non-discrimination compliance monitoring) is unavailable or available in forms limited in utility. In our field work we also learned that most schools collect and keep relatively little, if any, demographic or performance data on their applicants, their students, and their graduates. The student data they do keep is typically kept in unanalyzed, unaggregated form in individual student files so that information of interest--for example, a ranked comparison of men and women students on grades, attrition by sex, or any kind of trend information--is not available--or at least in many cases was not offered to nor shared with us. This absence of analyzed or aggregated data seemed also to be the case with demographic and performance information on faculty members.

Second, our visits confirmed what we believed from our preliminary research to be a substantial truth--that the power of the federal purse over these schools is enormous. While no school denied us an opportunity to make a site visit and conduct interviews, the degree of cooperation and assistance and the reception we received at the schools varied greatly and often as a direct consequence of concerns about federal funding. Most schools were extremely helpful and courteous in scheduling interviews, arranging meeting rooms, and in some cases providing the quantitative data and other written materials we requested. Many were anxious for post-visit feedback, and a few were very interested in knowing whether and how they could improve their recruiting of and educational programs for women. In some schools, however, it seemed to us that cooperation in hosting a site visit was offered principally out of a belief that we were in some way involved in HEW's non-discrimination compliance monitoring--even though all of our correspondence and conversations contained assurances to the contrary--and that the refusal to permit a visit would be risky. Indeed, one chief administrator told us that he had heard about the study through his educational association and at the time had hoped his would not be one of the schools chosen for a visit. When it was, he agreed to participate in the study only because he was afraid he would lose certain HEW funds if he did not. (In contrast, we visited one school which chose not to take federal funds and instead increased class sizes and tuition precisely so it would not be limited and restricted in its operations by federal regulations.)

A related finding during several of our visits was the anxiety some of the schools' chief administrators displayed about our presence on their campuses. In one school we were denied permission to use our tape recorders in any interviews or meetings. In another school, we were given permission to tape interviews but during our conversation with the chief administrator, he surreptitiously pulled the plug on the tape recorder which we did not discover until the interview was over. In that same interview the chief administrator repeatedly referred us to a particular assistant dean as the best source for information about the school's admission requirements and procedures and also as the keeper of all statistical data on applicants, students, and school faculty. We made numerous and diligent attempts to meet with this particular gentleman, but he was never available for his appointments. Some crisis or other always seemed to occur, and on one occasion he barely made it out of the back door of his office as we appeared at his secretary's desk in time for one of our scheduled appointments.

Third, we obtained some sense of a relationship between the proportion of women in a school and the degree of supportiveness or friendliness of the school's environment or "atmosphere". Atmosphere was always a relatively easy concept to operationalize and to operationalize quickly. Supportive schools were usually characterized by a high degree of consensus among faculty and administrators, relatively little conflict between students on the one hand and the faculty and administration on the other, and a fair degree of cooperation and respect between men and women students. Schools lacking those characteristics were also frequently lacking women students, and--as we encountered in one instance--even the few women students at the school were afraid to meet and speak with us. In another instance, however, the disaffection between students and administration was so great that the men and women students seemed united in their need for a common front and saw us as--and indeed hoped we would be--emissaries from HEW and change agents to correct a series of intolerable problems they felt they were experiencing in their school. These students problems--not specifically women's problems--were what concerned both men and women at this school.

Finally, we learned some highly useful things about women's experiences through our group interviews. We began the study with two basic topic/questions for these interviews which, it should be remembered, were originally only conducted with women students. One question was phrased, "Given your experiences and observations, what are the problems a woman encounters in becoming a physician/dentist/pharmacist/etc.?" The second asked, "Given your experiences and observations, what encourages a woman to become a veterinarian/optometrist/etc.?" We dropped the encouragement question after three or four group interviews because the women students simply could not relate to it. A few might and did enumerate particular individuals--usually parents or a spouse--as encouragements in considering and pursuing their profession; but after that, the groups inevitably ran into difficulty trying to respond to the question. By contrast, the problem question inevitably generated lively and intensive discussion which often ran three or more hours. In many schools--particularly those with few women--it also had an interesting side-effect. Our convening of the group interviews in such schools often represented the first and only time that the few women students in a class or in the school had ever been together as a group and discussed their experiences as women in the school. For many of them it was, therefore, the first opportunity they had to realize through this exchange that some of their experiences were commonly shared. Because many of these experiences were similar unpleasant encounters with male faculty members or students where the women felt put-down and treated poorly, these group interviews were often an important opportunity for their participants to gain perspective on their experiences by learning that sex bias was the operative factor in many cases and not some failing or imperfection in themselves as individuals.

In the mixed-sex group interviews which we conducted in the post-interim report portion of our field work, we had an opportunity to observe in almost a laboratory setting some of the interaction dynamics between men and women and the conditions which apparently could vary them. In groups where men outnumbered the women, women tended to participate in the discussions less.

They deferred to the men, supported and agreed with their comments, and literally physically looked to the men for agreement and support when making comments of their own. They typically did none of these things in relation to the other women in the groups and received none of these behaviors from the men in the group. Women's problems were rarely discussed in these groups. Rather general sorts of problems or what we later learned were "men's" problems dominated the conversations--for example concerns about academic pressures, making good grades, finding ways to succeed in professional practice without having to "give up your humanity", and, in the smaller and less powerful professions such as osteopathic medicine and podiatry, concerns about the profession's prestige and status. If and when women's problems were raised, they were usually raised apologetically and with some explanatory preface such as "...well, since this is a study of women...". By contrast, in groups where men and women were equal in numbers or where women predominated, women's issues and concerns were more often and freely discussed with fewer prefatory comments and more legitimacy. Women participated more frequently; were supportive of each other's comments; and occasionally received support from men in the group--often in the form of first, surprise that some of the issues women raised existed as problems at all,and then with supportive comments expressing empathy and a desire to help correct them. For example, the men offered comments like "I didn't know you felt that way--why didn't you ever tell me--I can see how that (not being listened to in a group conversation; not being invited out after class for a coffee or beer and the inevitable discussions about the lecture, the clinic work; etc.) would bother you."

The obviously interesting observation about the mixed groups with fewer women than men is thatthey resemble the MODVOPPP schools and individual classes, and the women's behaviors in these groups (and the men's) more nearly resembled behaviors that faculty members we interviewed often criticized in women--that is, that they are reticent in class, do not speak-up, are not aggressive about forwarding their opinions, and so on. The second obviously interesting observation--confirmed in a variety of other ways throughout the study and reported in the next chapter--is that women's behaviors (and men's) do appear to change and more nearly resemble men's when women are not a minority in a group situation. Thus as women come to represent a greater proportion of students and practitioners in the MODVOPPP health professions, it is reasonable to expect that their behaviors and men's behaviors may more nearly resemble each other's than they appear to now.

III. FINDINGS AND CONCLUSIONS

This chapter presents the study's main findings summarized and distilled from among those presented in the professions reports Volumes II-IX. As summary findings they are necessarily less detailed and more general than those reported in the individual professions reports. The findings discussed here represent those we consider most important and necessary to an understanding of the barriers women face as applicants to and students in the MODVOPPP health professions schools. They form the basis for the success models for recruitment, admissions, and education discussed in the next chapter.

Analysis of our study data, particularly including our field interviews in the MODVOPPP schools, suggests that there are several key barriers women experience as applicants to and students in the MODVOPPP schools. Some represent features of women's traditional roles in our society and certain specific consequences of those roles; some represent institutional and environmental features of the professions and the schools which train and socialize new members for the professions; and some represent direct conflicts and incompatibilities between women and their traditional roles on the one hand and the operations and requirements of the professions and schools on the other.

A careful examination of the problems women face as applicants and students as reported to us by our various respondent groups in the field also suggests that there are seven key resources which a person must possess or have access to in sufficient quantity to be a successful applicant, student, and ultimately practitioner in the MODVOPPP health professions; and the absence of or inability to obtain these resources represents barriers as well. These resources include: information; personal encouragements; institutional supports; the informal, professional collegial network; formal requirements; informal requirements; and funds and financing. Some of these resources are more critical to success than others at certain stages of the professional training sequence (the CAP or professional training model described above in methods), and some of them are generally more important in some professions than in others. In general, women more often than men do not possess or lack access to these resources as a result of their own characteristics and roles as women. In addition, the organization, operations, behaviors, and attitudes of key administrators, faculty members, and other students, and in certain instances, other institutions and policies including federal regulations, private agencies, interest groups, and so on, also contribute to the lack of or reduction in women's access to key resources.

This chapter discusses those characteristics of women, professions, and schools which singly or in combination with one another work as barriers to women's success as students and applicants. It defines and discusses the seven key resources people require for success as applicants to and students in the MODVOPPP health professions schools. And it considers some of the key ways in which the most important of these resources are made less available to women at each stage in the professional training sequence as a consequence of the interaction of key policies, practices, attitudes, and so on at each stage.

WOMEN, PROFESSIONS, AND SCHOOLS

Sex is a biological fact, but it is also a social phenomenon. Social science has amply demonstrated through an enormous body of research that all societies assign different jobs and roles to males and females, and on the basis of those roles, different interests, personality traits, attitudes, and other personal and social characteristics. It has also demonstrated that in spite of a universal distinction in every society between male and female, the specific activities and characteristics attributed to each sex in different societies run the gamut of human behavior. Roles assigned to males in one society are often assigned to females in another. Characteristics regarded as female in one culture are often found to be male in another, and both boys and girls are socialized to adopt the traits and behave in ways appropriate to the roles they are assigned in the culture. Put simply, they learn to be men and women.

Our society has traditionally assigned women primary responsibility for the private world of home and family through their roles as wives and mothers. Men have traditionally been assigned to the public world of work and politics with primary responsibility for acquiring for the family both income and prestige or status in the society. These distinctions between men's and women's roles and responsibilities are slowly beginning to blur as more women work outside of the home and marriage and child-rearing patterns change. Men are increasingly involved in child-raising and domestic tasks once assigned to women, and women increasingly are heads of household through divorce, separation, widowhood, by choosing to bear children out of wedlock, and in a few rare instances, by mutual agreement with a spouse. The average woman now has her last child at 26, and it is no longer assumed, as it once was, that most of a married woman's adult life will be spent in childbearing. Nine out of ten girls now in school will work outside the home at some time in their lives. Thirty-eight percent of the current labor force in the United States is female, and 40% of all women of working age do, in fact, work outside of the home.

In spite of these changes, traditional societal notions persist about what men and women should do and be and the corresponding appropriate interests, ambitions, characteristics, and personality traits they should display. Men are still viewed as and expected to be or become the primary breadwinners for their families. Women are still viewed as and expected to be or become primarily wives and mothers, and most young girls are raised to hold these expectations for themselves.

For women, the implications and consequences for professional careers of their traditional role assignments as wife and mother are numerous, profound, and the basis for some of the most critical barriers they experience as applicants, students, and ultimately practitioners in the MODVOPPP health professions. These barriers alone and in combination with some of the requirements and characteristics of the MODVOPPP professions and schools involve: limited professional or career aspirations; family obligations which conflict and are incompatible with professional obligations; professional opportunities and commitments which are generally given second priority to men's; and stereotypes about personal characteristics and preferences which reflect women's traditional roles and are incompatible with the personal characteristics expected of a MODVOPPP professional. Additionally, there are several features of the professions and schools which also function as barriers and these include: the professional networks on which much of the professions' activities and interests are based; the close links and relationships between professional practitioners and their networks and the professional schools; and the traditional male sex-typing of the professions and the schools. Each of these barriers is discussed below.

Limited Professional Aspirations

In our society where women's adult roles are still defined primarily as wives and mothers, most young girls are not encouraged to think about and plan for futures which include serious career commitments. Although most women will spend some years of their lives in the paid work force, few are actively encouraged to consider committing the time, the energy, and the money to an extended education which pursuit of a career or a profession normally implies and requires. More often, if young girls are raised or advised to plan for a working future at all, they are advised to acquire a set of skills which will enable them to get a job should they have to work--that is, in case they do not marry, are divorced, widowed, need to provide a second and supplementary income for the family, or, in case of family circumstance, must support their families. As a result, young girls are typically taught to think of work and preparation for work as almost a form of insurance, not as a set of activities of primary importance in their lives which requires and deserves commitment and which may be a source of personal satisfaction and challenge. Indeed, many of the women students we interviewed in this study indicated that, in fact, they received active discouragement from teachers, counsellors, family practitioners, family, friends, and others when they expressed interest in pursuing one of the MODVOPPP professions as a career.

These social pressures which work to prevent most women from seriously considering careers represent a particularly significant barrier in the case of the MODVOPPP professions. With the partial exception of pharmacy, all involve graduate education and thus represent long years of training. This ranges from a minimal one additional year beyond undergraduate work for some fields in public health to as much as twelve years in some of medicine's most demanding specialties. The sheer length of training, the need for costly special equipment in some of the professions such as dentistry and optometry, and the high tuition of a majority of the training institutions in some of the professions such as osteopathic medicine and podiatry mean that professional training is expensive and may require a willingness to incur substantial indebtedness in order to obtain it. (See Tables R and DD in Appendix G.) Time and dollar considerations are significant barriers for women who are not socialized to think in terms of committing significant amounts of either or both to an education preparing them for a professional career.

Since women are not normally expected or encouraged to consider serious professional career commitments, they are also typically channeled out of the educational courses and experiences which are necessary prerequisites for entry to the MODVOPPP professions. These are all science-based professions, and certain life and physical science and math courses are formal requirements for application and entry to a MODVOPPP school. Many studies have documented the sex-typed tracking of girls away from math and the sciences and into the arts and humanities and the reverse tracking for boys. For example, in an unpublished study of career aspirations of ninth grade boys and girls, 25% of the boys but only 3% of the girls were considering careers in science or in engineering. In a study of first year University of California/ Berkeley undergraduates, 44% of the male students had chosen majors in the physical sciences, life sciences, and mathematics as compared to 21% of the female students. In a systematic random sample of freshmen admitted to UC Berkeley in the fall of 1972, 57% of the men had taken four full years of math in high school, including the trigonometry and solid geometry sequence, compared with only 8% of the women. Many of the women we interviewed cited frequent examples of school counsellors and teachers who discouraged them from pursuing math and science courses as being too difficult or inappropriate for girls.

These discouragements combine to act as a very effective screening mechanism which limits the number of women who aspire to health professions careers and who appear in the MODVOPPP school applicant pools. This screening process also means that women applicants differ from men in some significant ways. For many women with whom we spoke, the discouragements they encountered meant a less direct route to professional training than for their male counterparts. Many women spent several years between pre-professional schooling and application to a MODVOPPP school in a variety of jobs and activities and, in some cases, training for and working in allied health professions before concluding that they wanted a full professional career and were able and prepared to devote the necessary time, energy, and money to achieve it. Some women had to return to school to take the math and science course prerequisites they had avoided in preprofessional schools due to tracking, discouragements, and/or a resulting lack of confidence about their abilities to handle these courses. Other women did not consider MODVOPPP careers seriously until after some years of being a wife and mother and concluding they wanted to fill out their lives with a professional career. The net consequence for all of these women was that they typically entered the MODVOPPP schools at a later age than most male students.

Data on medical students (See Appendix G, Table KK) clearly indicates that in medicine, on the average, women students are somewhat older than men. We do not have comparable data for the other professions, but our impressions from our field visits substantiate this observation. Table KK also illustrates that age serves as a barrier in professions such as medicine where the profession and most of its schools emphasize the importance of admitting younger students who will have the greatest number of years to give to practice. Thus in medicine, for both men and women, proportionately more younger applicants are accepted than older applicants. According to many of our respondents, age also serves as a self-imposed barrier in limiting the range of specialties some women will consider to those which require the fewest years of residency training. That is, since they are older when they begin medical school, they feel more pressure to complete training quickly and start their practice.

Finally, it is reasonable to conclude--as many of our respondents did--that the women who survive the many discouragements and social pressures tracking them away from professional interests do so only because of special circumstances in their lives which somehow offset and are more powerful and influential than the discouragements. Interviews with women students and available data from other studies on the demographic characteristics and family backgrounds of MODVOPPP students suggest three possible key circumstances. First, most of the women we interviewed could cite multiple and reinforcing encouragements and supports from friends, family, teachers, counsellors, MODVOPPP practitioners, and others, indicating that what is needed to counteract traditional discouragements and pressures moving women away from the professions is an overwhelming number of encouragements and pressures moving women towards them. Second, many of the women we interviewed either had a working or professional mother serving as a positive role model, or they had highly educated mothers who did not use their education in the labor force and served as negative role models in the sense that their daughters saw them as unhappy and frustrated. Third, many of the women we interviewed received particular encouragement and support in a very direct and personal way from a representative of the profession they chose--from a family practitioner, a family member in the profession, or perhaps just a school recruiter who made personal contact and in some manner encouraged and/or reinforced their aspirations to consider and apply to the profession. To the extent that these or other unique circumstances in women's lives are necessary ingredients in encouraging them to consider the MODVOPPP professions and to the extent that they are also rare, then women's traditional roles and the socialization process that prepares them for these roles will continue to limit the number of women who do apply to MODVOPPP schools.

Conflict between Family and Professional Obligations

The women we interviewed in the MODVOPPP health professions schools spoke most frequently about a variety of problems they have--or anticipate--in combining their responsibilities as wives and mothers on the one hand with their responsibilities as students and practitioners on the other. The basic problem or issue involved in their concerns is that the traditional roles of wife and mother and the roles of MODVOPPP student and successful and active practitioner are, in some ways, structurally incompatible. Clearly, not all professional women marry or have children; indeed, available data on women in medicine (See Appendix G, Table II) and available studies on women in academia and other professions suggests that fewer professional women than men marry and of those who do, they typically have smaller families. Nevertheless, the majority of these women do marry, and for those who elect to have children, the timing, commitments, priorities, and requirements of wife/mother and of MODVOPPP student/professional are very much in conflict with one another.

As already noted, all of the MODVOPPP professions have lengthy training periods. In most cases it is rigorous, demanding, relatively inflexible, and characterized by much stress, competition, and long hours of study. In medicine, osteopathic medicine, and increasingly dentistry, veterinary medicine, and podiatry, postgraduate training involving internships and/or residencies further extends the professional training period. These years of training extend primarily through most students' 20s; in medicine, depending on the specialty selected, they extend well into their 30s. Frequent night and weekend study and work in laboratories is common in preclinical years and courses. Later in clinical years and during internships and residencies, frequent night and weekend work and long hours are built into the training requirements. Students must be available for extended periods of time and frequently on an irregular "on-call" basis in order to take maximum advantage of opportunities to see and participate in interesting cases. In some of the MODVOPPP professions--medicine in particular--the dedication, interest, and commitment of students, interns, and residents to their profession are frequently measured by how much time they are willing to commit to the clinic or hospital situation beyond an already demanding schedule. In most schools, part-time training is not available. In most training hospitals, flexible and part-time residencies and internships are rare if available at all. In short, the training period in most of the MODVOPPP professions is not only long and demanding but also quite rigidly structured.

When training is complete, strong commitments to establishing practice are required and are normally reflected again in long hours. Depending on the profession--or specialty--professional practice may require being essentially on-call full-time--for example, in rural large animal practice in veterinary medicine or in general practice, internal medicine, OB/GYN, and family practice in medicine and osteopathic medicine. In dentistry, podiatry, and optometry where solo practice is still the dominant form of practices the investment of money, time, and energy required to establish a practice, acquire patients, and in essence start a successful business demand a total commitment and availability to the needs and exigencies of that business.

These years of training and early practice--for most students their 20s and 30s--are also the years when couples normally establish their families and when women who will bear and raise children do so. Marriage for most women involves assumption of domestic tasks and responsibilities which are time-consuming. Even when they are shared with a spouse, the principal responsibility often still remains with the woman. Moreover, interviews with many of our married women students suggest that marriage puts them in a situation of conflicting emotional loyalties since the traditional role of wife also carries with it the notion that familial duties should be a woman's first and primary commitment and interest while the role of MODVOPPP student and professional also requires first priority on a person's time, energy, attention, and availability. If women also bear children during these years, their responsibilities as mothers require time, energy, availability, flexibility, and again, a total commitment to the role and obligations of motherhood.

Thus there is a fundamental incompatibility between the requirements of the roles of wife/mother and of MODVOPPP student/professional. Certainly many women combine the two roles successfully. However the absence and/or cost of good child care, domestic help, and/or part-time and flexible training programs to help negotiate the incompatible demands between professional commitments and familial commitments means that for many women who attempt to combine both roles, each role imposes limitations on the full realization of the other. Our study was not designed to allow us to determine whether the unavailability of part-time training in MODVOPPP schools is a barrier to women who might otherwise apply. However it seems reasonable to conclude that that may be so. Available evidence in every field does indicate, for example, that married women are less active in their professions than single women are and that married women with children are even less active. (Table JJ in Appendix G illustrates this relationship for women in medicine.) In fact, many researchers have suggested that one of the reasons professional and academic women are less often married than their male counterparts is precisely because the incompatibilities in assuming both professional and familial roles for women are more likely to require a choice in favor of one or the other if the woman is to be fully involved in whichever choice she makes.

Our women respondents described other stresses involved in the incompatibilities between familial roles and professional training and practice. For some women, these stresses may be barriers to their full and active involvement in professional training and practice. The rigors of professional training and establishing a practice demand what some have called a personal support system--someone who provides emotional supports and encouragements; takes care of the administrative details and logistics of daily living including errands, cleaning, cooking, scheduling of social activities; and so on. Many women faculty members and students expressed the absence and desire for such a system by noting, "If I only had a wife, how much more I could do." Studies have demonstrated that married women graduate students face greater pressures to drop out of school than any other group and that married men and divorced women are the most able to put first priority on advancing their careers. These studies illustrate both the importance of the traditional support system the role of wife provides for professional men and the stress engendered for the professional woman or students who must assume both roles and has no "wife" of her own.

Women's Careers Are Second Priority to Men's

Since women's traditional roles are still considered a woman's proper primary commitment, it is a widely held belief that a woman's work and professional life is and should be secondary to her family responsibilities. Along with this goes the belief that her husband's career (if she is married) and the careers of other male family members are and should be of primary importance.

Women we interviewed expressed the prevalence of and, for them, certain problems and barriers resulting from such beliefs. In all of the MODVOPPP professions, women reported problems in obtaining financial support for their schooling from their families either because their careers were considered unnecessary or as less important than their brothers'. Our study cannot demonstrate whether the inability to obtain family financial support precludes a significant number of women from ever applying to the MODVOPPP schools at all, although based on our data it is reasonable to hypothesize that that may occur more often for women than for men.

Women and other respondents also frequently mentioned problems which center around the restraints that marriage or an alliance with a man puts on a woman's professional and geographic mobility. Since a family's place of residence is typically defined by the husband's place of business or profession, women less often have control over their own mobility. In some instances, for example, married women students or students anticipating marriage told us they did not accept armed forces or public health service loans because they could not be sure they would be able to move where assigned when the time came after graduation to pay back the loans in the form of duty service. We met and spoke with several women who had interrupted or delayed their educations or residencies in order to stay with or follow their husbands to cities where their husbands' professions or businesses required their presence. A number of respondents described cases where faculty women were not offered positions which would have advanced their careers because it was assumed that they could not or would not relocate.

Handling the assumed primacy of a man's career is sometimes difficult in other ways--particularly if both parties in a couple are in the same career. Women

MODVOPPP students often date and/or marry students in the same profession, and this occasionally causes problems in the relationship over comparative performance in school. Men and women students both described situations where women intentionally performed less capably on exams and in clinic situations out of deference to their spouses and boyfriends.

Finally, many women noted--as did some male administrators and faculty members--that the woman who seeks a high status MODVOPPP career limits her opportunities for finding an eligible and desirable mate. Men in this society become more attractive to an expanding group of women as they enter the more prestigious occupations and professions. As a woman becomes more successful, fewer men see her as an acceptable match. Women we interviewed were very aware of this and spoke of it as an issue when deciding whether to pursue a MODVOPPP profession, as a problem in their daily lives creating a certain amount of social isolation and absence of dating opportunities, and as an anticipated future problem in terms of finding a mate. Many of the men we interviewed verified the women's comments by noting that they would not want working wives and that they found the women in their classes undesirable as social companions.

Stereotypes

Stereotypes are simplified descriptions of the behaviors and presumed characteristics of the majority of specified groups of people. Studies of stereotyping have demonstrated that stereotypes do reflect reality but that they are also pervasive and persistent even when changes in actual behaviors occur.

In the course of our field work we heard many and varied stereotypes or descriptions about women from our respondents. Some were complimentary, some not. In general, however, stereotypes were typically used by administrators, faculty members, and male students to explain why women are or are not suited to professions in general, to particular professions, and/or to particular specialties or tracks in a profession; why women historically have not participated in the profession; why women have or would have a negative impact on the profession if admitted in greater numbers; and why women would have a positive impact on the profession if admitted in greater numbers.

Whether used positively or negatively, all of the stereotypes and descriptions given about women reflect the behaviors and personal characteristics and traits which are a part of the traditional roles women have played as wives and mothers as the society has defined those roles. Thus women are described as interested in and committed to their homes and families above all else. They are described as dependent, passive, and indecisive. They are described as emotional, caring, nurturing, sensitive, and sympathetic to interpersonal relations, and typically involved with others' feelings, needs, and problems. They are considered bright but not analytic and often without sufficient emotional or physical stamina to adequately handle much stress.

These descriptions or stereotypes about women tend to function as barriers to women as applicants, students, and aspiring professionals in the MODVOPPP health professions for several reasons. Perhaps of greatest importance is that they are in conflict with most of the characteristics which the professions require of their members. Most of the professional schools believe they can train and they try to train their studenst to acquire desired professional characteristics. But by and large, to assure that future practitioners have these characteristics, admissions to the schools is used to screen for those applicants who appear to have them already.

Professions above all require a single-minded dedication and commitment to the profession and to professional practice which reflect their histories as "callings" or communities of devoted, high-minded men placing service to the community and betterment of society above personal and private interest and gain. The old country parson, lawyer, and doctor were all prototypical examples of the professional in this sense. Today, the dedicated MODVOPPP student and professional is typically "recognized" by his/her willingness to work long hours and put professional practice as a first priority above all other life interests and commitments. Because women are viewed as committed first and foremost to their familial roles, and since many do, in fact, devote more time and energy to those roles than men do, women have a difficult time establishing their credibility and legitimacy as professionals.

Since professions involve personal services and client or patient relationships based on trust in the competence, wisdom, and integrity of the practitioners, professions require that their members communicate an aura of confidence, certainty, authority, independence, initiative, and a decisiveness and ability to make right judgments and decisions under stressful circumstances. These characteristics directly contradict those which describe women as dependent, passive, indecisive, unanalytic, and unable to handle stress.

Finally, certain inherent features of the work of the MODVOPPP professions require additional characteristics. With the exception of some sections of public health, the MODVOPPP professions all deal directly with issues and problems which are socially difficult in our society: illness and disability, nudity, physical and emotional pain, the physical ugliness of blood and disfiguring accidents, mental illness, and the needs and fears of patients and their families and friends. Thus the professions insist that practitioners be able to detach themselves from their patients' problems and remain uninvolved, that they be capable of appearing cool and confident under stressful conditions, and to a lesser extent that they have the ability to communicate under trying circumstances with patients and their loved ones. Women's caring and nurturing qualities as well as their interpersonal sensitivities and skills are sometimes perceived as assets in terms of these needed characteristics. Just as often, however, women are described as too emotional and too likely to get over-involved with their patients and thus not be in possession of the key characteristics needed for the difficulties of the profession.

Stereotypes also tend to function as barriers to women because they are often used to see only those parts of an event or a woman's behaviors which are consistent with sex-biased expectations. For example, when students' performances in patient management and other aspects of clinical work are evaluated, stereotyping frequently puts women at a disadvantage as the following incident illustrates:

> *We have this clinical professor who believes women just can't handle patients. One day I was working on a little girl--she was about four--and things were going just fine until he came over to check my work. He was so brusque in his manner and his voice was so loud that she started to cry. Would you believe that the next day he told the class about how I couldn't handle my patient--how she was crying and carrying on--and he used that as an example of how women can't handle their patients. (Fourth year student, female, Dentistry.)*

Stereotypes function as barriers to women as applicants, students, and aspiring professionals because they establish an environment of expectations about and descriptions of women as a group which do not necessarily fit any individual woman and with which every individual woman at one time or another may have to contend. We have already noted the ways in which women's personal characteristics may be considered incompatible with and inappropriate for a professional. Women's presence in the schools is also often questioned by faculty members and male peers on the basis of their motivations and commitments. Women are sometimes assumed to be in school simply to prove a point or because they are "libbers." Assumptions also include the belief that the primary reason women are in school is to find a good husband and go off to raise children. This stereotypic assumption or expectation that women will readily quit their profession if the opportunity for marriage arises is a particularly crucial one since the argument that women do not practice and are thus not good educational investments is the most frequently articulated hesitation MODVOPPP professionals express about allowing more women into the professions. It is also the source of much of the resentment expressed by male students towards women students in the schools and is the basis for challenging their presence on the grounds that "they are taking a man's place...".

Finally, a whole set of expectations and assumptions were expressed by faculty members and administrators about the impact women will have on the profession if admitted in large numbers. Some suggested positive benefits such as long overdue and needed concern with quality of patient care, sensitivity to patient needs, and so on. However, many also expressed negative consequences. The frequently mentioned problem that "women don't practice and are a bad investment" is one. A related assumption is that women will drive down prices because they work for less--because, it is stated, in European countries where women are heavily involved in many MODVOPPP professions, the professions are less well paid. Women are also frequently viewed as cause for lowering the status of the professions--and again, European countries are cited as examples of this phenomena. Finally, women are described as less involved and committed professionals who do not participate in professional acitivities and do not contribute to or advance the profession politically or organizationally.

All of these stereotypes, beliefs, and assumptions are a daily part of the environment women face as applicants to and students in the MODVOPPP schools. They are a source of great concern, aggravation, and anger for some women; they are noticed but do not trouble others; and some women do not notice--or at least do not comment on them at all. But because these beliefs about women define them differently from men, women's experiences in the MODVOPPP professional schools are by definition different from men's. In many cases, it appears that their very presence is questioned, and in some cases not welcome. MODVOPPP professional training is a competitive, stressful, and anxiety-provoking experience for all students. For women, the stereotypes and assumptions about them add to that stress.

Professional Network

Professions are communities of practitioners selling their specialized skills and knowledge primarily through personal services. These communities are based on a network of formal associations and organizations including national, state, and local professional associations; educational associations; specialty boards and colleges; fraternities; and other organized groups. They are also based on an informal system of referral, work, and social relationships. Both the formal and informal systems support and make professional practice possible, and both are partially designed to advance and protect the economic and other interests of their members.

Professions have long used their formal organizations and the power of informal networks to develop a system of controls over professional training and practice. As Table 3 below shows, over the years professions have successfully used their professional associations and collegial networks to lobby for and gain control over practice requirements through state licensing laws and the establishment of their own specialty certification boards. The professions have controlled access to the profession by controlling the educational process at a number of points. They have established the right to accredit their own schools and thus to develop their own requirements for admissions and training. Many of the professional and educational associations further involve themselves in defining the applicant pools to their schools through the administration of professional aptitude tests and centralized application services and in some cases by providing special recruiting programs and materials to their member schools. (See Table 4 below.) These controls have served in many of

TABLE 3

KEY EVENTS IN THE PROFESSIONALIZATION PROCESS OF THE MODVOPPP HEALTH PROFESSIONS

"Professionalization" Highlights	Medicine	Osteopathic Medicine	Dentistry	Veterinary Medicine	Optometry	Podiatry	Pharmacy	Public Health
Year First School Founded	1767	1892	1840	1852	1892	1912	1821	1913
Year First Woman Admitted to School	1847	1892	Granted DDS 1866	1915	never excluded	never excluded	1863	unknown
Year Nat'l Professional Association Founded	1846	1897	1859	1863	1897	1912	1852	1872
Establishment of a Code of Ethics	1847	1904	1859[a]	1866	1944	Committee Est. 1916	1852	not applicable
Year All States Pass Licensing Acts	1910	1973	1935	1931, except Alaska, 1962	1924	1921	1945 Hawaii	not applicable
Year of First Licensing Act; State	1847 all states[b]	1896 Vermont	1868 Ala., Ky. Ohio, N.Y.	1886 New York	1901 Minn.	1912 New York	1874 Kentucky	not applicable
Year Profession Gains Control over Own Accrediting Process	1906	1967	1906	1932	1930	1912	1900	1945
Year First Journal Initiated	1883	1901	1839	1847	1890	1907	1825	1904
"Landmark" Report for Education	Flexner 1910	N/A	Gies 1926	N/A	Havighurst 1973	Selden 1961	Eliot Survey 1948	Olsen (HA) 1954

[a] *Presumed; "Principles of Ethics formulated by the Association".*

[b] *Replaced licensing Acts of the first thirteen states which were revoked in 1837; the first of these was passed in 1791.*

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TABLE 4

MODVOPPP HEALTH PROFESSIONS ASSOCIATIONS AND SERVICES

	MEDICINE	OSTEOPATHY	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
PROFESSIONAL ASSOCIATION	American Medical Association (AMA)	American Osteopathic Association (AOA)	American Dental Association (ADA)	American Veterinary Medical Association (AVMA)	American Optometry Association (AOA)	American Podiatry Association (APA)	American Pharmaceutical Association (APhA)	American Public Health Association (APHA)
WOMEN'S ASSOCIATION	American Medical Women's Association (AMWA)	Women's Auxiliary of the AOA	American Association of Women Dentists (AAWD)	Women's Veterinary Medical Association (WVMA)	None	American Podiatry Women's Association (APWA)	Women's Auxiliary of APhA	N/A
STUDENT ASSOCIATION	American Medical Students Association (AMSA)	None	Student American Dental Association (SADA)	Student Am-Veterinary Medicine Association (SAVMA)	American Optometric Students Association (AOSA)	American Podiatry Students Association (APSA)	Student American Pharmaceutical Association (SAPhA)	N/A
EDUCATIONAL ASSOCIATION	Association of American Medical Colleges (AAMC)	American Association of Osteopathic Colleges (AAOC)	American Association of Dental Schools (AADS)	American Association of Veterinary Medical Colleges (AAVMC)	Council on Education of AOA	American Association of Colleges of Podiatric Medicine (AACPM)	American Association of Colleges of Pharmacy (AACPh)	Association of Schools of Public Health (ASPH)
ASSOCIATION RECRUITS (WOMEN)	Minorities, not women	Yes, all students	Yes, film, brochures	No recruiting of any students	Yes, film, brochures Practioner/ Counselor	Yes, all students	Minorities, not women	N/A
CENTRALIZED APPLICATION SERVICE	AMCAS	OMCAS (new)	AADSAS	-	None	AACPMAS	None	N/A
RUN BY:	AAMC	AAOC	AADS	-	-	AACPM	-	-
APTITUDE TEST	MCAT	MCAT	DAT	VAT	OCAT	CPAT	SAT	GRE

the professions to limit the number of available practitioners which some argue is the key mechanism the professions have used to protect their economic position. While most occupational groups have formal associations, unions, and interest groups to protect their economic and status positions, professions do so in the name of protecting the public and the kinds of services the public receives. Thus, with the exception of public health all of the professions have developed codes of ethics to symbolize their commitment to the public good. Some observers argue that these codes further secure the economic position of the profession's members by prohibiting advertising and competition. The professions are also very watchful of federal funding legislation affecting their schools and interests. Some professions--podiatry being the most notable example--depend on the lobbying activities of their practitioners to secure the most favorable federal funding for the profession.

The importance of both the formal associations and the informal network to the profession's continuing ability to protect and control its training requirements and procedures, its work, and its working conditions means that the professions depend heavily on the active involvement of large numbers of their members in professional affairs. As a practitioner's dedication is often measured by the number of hours s/he works, it is also measured by his/her involvement in professional affairs--membership in the professional associations, participation in association meetings and conferences, serving in appointed and elective offices, and so on. Available but sketchy data suggests that women do not participate in these forms of professional activity as much as men, and this is frequently cited by administrators and clinical faculty members as one reason why women are not as welcome in the professions as men.

We have already observed that conflicts in timing between women's childbearing years and student and professional practice years may account, in part, for the married woman's reduced involvement in professional affairs. (See again Table JJ Appendix G.) There is also reason to suppose that women may not participate because they either do not feel they are welcome and/or because they have established strong and active women's associations, as is the case in medicine. (See Table 4 above.) Some of our women student respondents told us of experiences at student association annual meetings where they felt their contributions were not listened to or used and their presence hardly noticed, and they indicated that such experiences were responsible for their disinclination to participate in student professional activities in the future. Professional women may have the same experiences in their professional associations and respond in the same manner as the students. However, whatever the barriers to women's involvement in professional affairs, that women are reportedly less involved than men is itself a barrier to their full acceptance by the profession.

Relationships between Professional Practitioners and the Schools

In our discussion of professional networks we noted the close connection between the professions and their schools through the controls the professional associations exercise over the educational training requirements and through certain services they provide to the schools. There are two additional ways in which practitioners in the professions are significantly involved in or have influence over the schools. The first is through their participation in professional training itself; and the second is through their lobbying activities and informal pressures on the schools.

MODVOPPP schools have several purposes. One is clearly to give to students the technical knowledge and skills they will need to function as competent practitioners in their professions. In addition, however, the schools also have as their purpose a socialization function--that is, teaching students an appropriate set of values and beliefs about their work, their colleagues, and their patients, and assuring that they have or develop an appropriate set of personal characteristics, behaviors, and demeanors suitable to the profession. Much of this second purpose is accomplished in the clinical years (and, in medicine and other professions which include an internship and/or residency period, during postgraduate training) through the use of practitioners and clinicians as instructors who both provide technical information to students and who serve as role models and mentors in the socialization process.

The presence of these clinicians in the schools is often a barrier to women because many believe women do not belong in the profession and in a variety of ways treat them accordingly. Two illustrative quotes perhaps best express the attitudes that some of the clinicians in the professions hold about women.

> *I remember, oh, in 1969 and 1968, we admitted three females that year. That was the highest of all time. It was a scandal. We previously had one. We had one who entered in 1953 and one in 1964. But I do recall when we had those first three ladies in class, there were all sorts of comments from the clinical faculty--negative type ones, like "What are women doing in our profession?" --*our *profession. (Male administrator, Dentistry.)*

> *The older practitioners, you know, that went through school five* [sic] *or more years ago--they'll always consider it a man's profession. (Male administrator, Optometry.)*

Practitioners who hold such views are also occasionally the source of pressures reported to us by some administrators to limit the number of women who are admitted to their schools. In private schools these pressures are apparently most often expressed directly by individual alumni and through alumni groups with the implied or overt suggestion that too many women may result in reduced financial support. In public schools pressures are apparently more often directed at state legislators but with the same implied or overt suggestion that the schools should admit fewer women if they wish to continue receiving adequate state funds.

The continuing increases in the numbers of women enrolling in MODVOPPP schools over the last several years suggest that the sex-biases of some professions' practitioners are not particularly effective in limiting women's success as applicants to the schools. But their attitudes in the schools do appear to contribute to creating an unwelcome environment for women, and as discussed in more detail below in the section on preclinical/clinical training, may also result in unequal grading and other negative consequences for women.

Male Sex-Typing of the Professions and Schools

The final and perhaps most basic and obvious feature about the MODVOPPP professions and schools is that they are all heavily sex-typed as male professions and schools. With the exception of public health, a field initially developed largely by public health nurses, all of the professions have historically been viewed as and, in fact, were principally male. Even with the rapid and recent increases in women's enrollments (see Table 2 in the Introduction and A-D and F-I in Appendix G), all are still predominately male.

This feature of the professions and schools serves as a barrier to women in innumerable ways. It means that for many women these professions are not even considered as options for future careers--women simply "don't think of it." Faculties and administrators are largely male which means that women have few role models upon which to pattern themselves. Male majorities in the schools affect teaching styles, the manner in which material is presented, and the interaction patterns of faculty and students. The training process is designed for men to relate to men as the lecture warm-up jokes and playgirl slides evidence. Physical facilities were constructed in days when no or few women students were present, so adequate facilities for women are either non-existent, inadequate, or segregated from those used by their male peers.

Institutional practices, policies, programs, and services often do not accommodate women students' needs. Examples include lack of student health services, which include family planning and gynecological care, personal counselling, security or escort services in urban centers, and so on. Even in schools where appropriate facilities and services for women now exist, the schools typically have little control over outside training sites such as hospitals, clinics, and private practice settings where women may again find inadequate facilities and services and generally unwelcome environments. The net result of this male orientation in the MODVOPPP professions and particularly in the schools is frequently to limit women's full and equal access to all of the resources the health profession student needs to assure full and equal access to the schools and to professional practice.

SEVEN KEY RESOURCES FOR SUCCESSFUL ACCESS

In the chapter on methods we defined success for women in the MODVOPPP schools as equal access--equal access to applicant pools, to the schools through admissions, to the educational training and professional socialization process which occurs in the schools, and ultimately to full participation in the profession. We defined barriers as whatever has the power to interfere with equal access--with success. Barriers may be the presence of characteristics of women, the professions, and schools which limit or deny women access; or they may represent the absence of resources required to secure equal access.

That every potential MODVOPPP applicant and student must possess or have access to certain key resources in order to successfully compete for and complete professional school training is obvious--sufficient funds and financing sources are the most notable example. However, as we analyzed our field data, a number of related applicant and student problems, issues, and concerns continued to surface in all of our respondent interviews, and these suggested other resources required for success including: information; personal encouragements; institutional supports; the informal, professional collegial network; formal requirements; and informal requirements. Our data analyses also indicated that, in general, the importance of these resources varies at different steps in the professional training sequence; that they are more important in some professions than in others and more important in some of the steps in certain professions than in the same steps in others; and that with the possible exception of formal requirements, women possess less of these resources and have less access to them than men.

As is always the case with attempts to classify complex information, there are several problems inherent in the seven resource categories we have identified as necessary to success for MODVOPPP applicants and students. First, to some extent, they are arbitrary as is the assignment of specific phenomena or events to one or another of the categories. For example, we have included teachers, counselors, and other officials of educational institutions and professional associations in the category of institutional supports even though they frequently give personal encouragement to potential MODVOPPP applicants and to students in the role of friend, acquaintance, or family member. Similarly, a family practitioner may be a source of information and/or personal encouragement to consider his/her profession, but as someone with probable referral, work, and social relationships to others in the profession, s/he is classified as part of the informal, professional collegial network.

A second and related problem is that many of the resources are not independent of each other. To the contrary, they are inter-related and typically operate in combination with one another. So, for example, information as a resource is dependent on and transmitted through institutional supports such as counsellors, brochures, and entire recruitment programs sponsored by schools and in some cases by professional associations. Access to the informal network depends heavily on whether its members include or accept someone into their various work and social relationships, and acceptance in part depends on whether one has the necessary desirable personal characteristics and attributes which are part of what we have called informal requirements.

With these limitations in mind, we define each of the seven resources below and show in most instances whether and how they are related to certain of the other resources. In the following section we discuss in more detail why women lack access to or possess fewer of these resources at each step in the professional training sequence and the ways in which lack of access or possession serves as a barrier to equal access to the professions' applicant pools, education and practice. Where significant, we also indicate which professions and at which stage(s) in the professional training sequence certain resources are particularly important.

Information

We include in information past and current facts, images, and stereotypes about professions, schools, hospitals, clinics, specialties, professional associations, professional practice, and other parts of the broader professional and health care delivery system--information or data which people require in order to identify and consider the MODVOPPP professions as possible career choices; to assess, compare, and select among them; to apply to schools for admission and, in professions with substantial post-graduate training components, to select a specialty and apply to an appropriate post-graduate training institution; and finally to identify, assess, compare, and select among possible practice options including opportunities for institutional employment, solo practice, practice in a group or partnership, and so on. Information in this sense may be official and public--that is, whether in written, verbal, or audio-visual form, available through formal information channels such as brochures, films, catalogues, and information officers in professional associations, schools, and hospitals--or, what we have included below in the category of institutional supports. It may be unofficial and public--that is, in the form of images and stereotypes generated and/or disseminated by the written and electronic media--magazines, advertising, television, radio, and movies. And it may be either official and private or unofficial and private--that is, information which, whether rumor or fact, is disseminated through informal channels such as friendships, work group relationships, and other informal contacts--what in part we define below as the informal network. Sometimes called "insider information", this latter category often includes valuable information about people and institutions--for example, who has power, who has good contacts, who to see with a problem, whether and how policies, procedures, and requirements can be changed to suit one's personal needs, and so on.

We also include in information the formal technical material, techniques, and skills taught to students as part of the professional training and socialization which constitutes preclinical, clinical, and postgraduate education in the MODVOPPP professional schools and affiliated training hospitals and clinics. Educational and technical information is transmitted through textbooks, lectures, laboratory courses, workshops, seminars, informal and formal discussions with faculty members, other students, and practitioners in the profession. Most of the techniques and skills which students are expected to develop are taught by example in clinical programs through clerkships, externships, and preceptorships where the student works closely with and under the supervision of professional practitioners. Many specific technical skills are also transmitted in the clinical programs either through example and observation where students watch a practitioner perform certain exams or other procedures and/or through experience by performing them themselves. In clinical and postgraduate training in particular, the opportunity to be a continuing part of any informal conversations that precede, follow, and in general surround more formalized settings and events where training takes place is a critical part of a student's skill training and socialization as is full opportunity to observe and try out all procedures and exams that are a part of the training experience. Anything which interferes with a student's opportunities to participate in and experience the full available range of these aspects of professional training interferes with the quantity and quality of the training process itself. Physical facilities in hospitals and clinics which are part of the institutional support system, the attitudes and modesties of practitioners about patients' presumed sensitivities and preferences regarding the personal characteristics or informal requirements of those who may examine them, and the extent to which students are included or excluded from informal conversations and social groups involved in the informal network are key in determining access to these aspects of professional training.

Personal Encouragements

Personal encouragements include the emotional and social supports needed by MODVOPPP applicants and students and sought and/or received from parents, siblings, relatives, family friends, spouses, children, student colleagues, women friends, men friends, and others. Support from these groups is important in encouraging individuals to consider MODVOPPP professions and in building the necessary confidence to apply. Once in school, support is needed to help counteract the stress and anxiety which are such constant and salient features of MODVOPPP professional training. Thus having friends, dates, and/or spouses with whom to share problems and enjoy relaxing hobbies and interests is important. A network of friends and other support sources is also important to continue building and/or maintaining the student's confidence when needed and to reinforce the legitimacy and value of his or her ambitions and pursuits. For women, personal encouragements may also depend on and come from the presence of other women in their classes and/or their schools, whether in the form of organized women's groups or simply through friendships made possible by the presence of a sufficient number of women to permit such friendships based on common interests and lifestyles.

Personal encouragements we also define as an absence of discouragements. Given the societal pressures which typically limit women from considering MODVOPPP careers, an absence of discouragements from parents, friends, and others--or a reduction of some of these pressures--may allow a woman an opportunity to consider pursuit of and application to a MODVOPPP profession. Similarly, given the rigors of MODVOPPP training and, for women, the teasing, prejudiced behaviors and attitudes, and directly expressed resentments and dislike toward them from male students and faculty members, simply the absence of such behaviors can be supportive.

As we noted earlier, personal encouragements in the form of support also come from preprofessional school counsellors and teachers, family practitioners, clinicians, women faculty members in the MODVOPPP schools, and so on. We do not include these individuals or groups as part of the personal encouragement or support system but rather as part of the institutional or informal networks which they represent and of which they are members.

Institutional Supports

Institutional supports include official policies, procedures, programs and services, facilities, equipment, and the personnel associated with and representative of MODVOPPP professional and educational associations and schools, preprofessional schools, and other outside but interested and related organizations and groups such as federal and state governments, banks, private associations, foundations, the media, and so on. Institutional supports are often the formal channels through which certain kinds of information flow and are transmitted.

Institutional supports are a vital resource to all students because many are an integral part of the recruitment, admissions, and educational process and are central to their scope and quality. The quantity and content of recruitment information and the media and distribution channels used are essential to a recruitment program's effectiveness. The membership composition of an admissions committee and the procedures and criteria used to screen and select applicants are critical in determining the characteristics of the schools' entering classes. The structure and content of the schools' curriculum, the adequacy of laboratory facilities and equipment, the expertise of the faculty, and the facilities available in clinical training sites for maximizing learning contact with house staff and attending clinicians are all essential in assuring the quantity and quality of learning available to students. Support services and facilities such as housing, escort and security services, health services, recreational facilities, childcare programs, academic and personal counselling services, and other support systems are also instrumental in assisting students to obtain maximum value from their training years. Placement and information services for summer work, summer externships as required parts of the curriculum, and post-graduate training and/or job placement may be key provisions in assuring all students equal access to these opportunities.

Institutional supports in the form of official school policies and the posture or position of key administrators on certain issues of importance are highly instrumental in establishing the tone, atmosphere, or environment of a training institution. Most notably, for example, the extent to which the chief administrator and major department heads are willing to publicly and privately support the presence of women at an institution may be the key to whether negative and non-supportive faculty and/or male student prejudices and behaviors towards women are allowed expression.

For women in particular, the presence of women faculty members and administrators in sufficient numbers to serve as a variety of role models is a structural feature of schools which serves as an important institutional support. Similarly, formally-sponsored and supported women's groups, ombudswomen, counsellors and counselling programs, and affirmative action offices and officers with women students included among their targets of concern are equally important.

Like personal encouragements, institutional supports may often represent an absence or lack of non-support--for example, the high school counsellor acting in his/her official capacity who advises a potential MODVOPPP applicant not to consider a MODVOPPP profession, or a professional school faculty member or counsellor who makes no effort to assure that a discouraged student and potential drop-out remains in school. For women, the total absence of or segregated changing, showering, locker room, and sleeping facilities in clinical years and post-graduate training denies them access to an important part of the educational experience which takes place during these stages of the professional training sequences.

Informal, Collegial Professional Network

The informal, collegial networks include the referral, work, and social relationships which link aspiring MODVOPPP applicants, students, and practitioners, and through which information, power and influence, and client and patient referrals travel. Informal networks are an inherent feature of all institutions and organized social life, but they are particularly important in the MODVOPPP professions for several reasons. MODVOPPP students spend many years together and share many arduous experiences. Like servicemen who saw battle together, their friendship ties and loyalties emerge from and are perhaps strengthened by their common and stressful experiences. Many of the MODVOPPP professions and certain of the medical specialties are economically dependent on functioning patient referral networks for their operation and survival. Since the MODVOPPP professions are all involved in providing personal services, the personal traits and attributes of practitioners are considered important. The informal network provides information about the characteristics of applicants, students, and practitioners from friends and colleagues whose judgment is respected and trusted. Finally, much of the professional training involved in a MODVOPPP education is based on and requires the acquisition of personal attitudes and behaviors which are considered appropriate and necessary to competent practice. This form of training involves a socialization process which takes places most effectively when it is grounded in frequent and comfortable contact based on like interests and characteristics.

The informal network as we define it includes some formal organizations such as the local professional school fraternities because membership in these organizations is often the initial basis for additional and/or continuing relationships that exist independently of the organizations themselves. Thus fraternity membership in professional schools in pharmacy, optometry, and dentistry, for example, is often the basis for later professional job, patient, and client referral networks. The informal network also includes the individual family practitioner, for example, since his or her contact with other members of the profession may be used and useful in promoting an individual's application to professional school or later in assisting a MODVOPPP graduate to locate a job or practice associateship.

Formal Requirements

Formal requirements include the stated, clear, and often measurable, quantifiable, objective criteria and standards which MODVOPPP applicants, students, and graduates must meet in order to be admitted to and pass through each step of the professional training sequence. For admissions they may include required preprofessional coursework; adequate grade point averages in science, math, and/or overall; competitive professional aptitude test scores; prior experience in and/or knowledge of the professions; a sufficient number of letters of recommendation from appropriate types of people; and successful interviews. For completion of professional training they may include appropriate coursework and adequate grades and evaluations in required courses. For post-graduate training and/or practice they may include passing necessary licensing and/or certification examinations, appropriate numbers and types of letters of recommendation, satisfactory interviews, and for specialty practice, completion of the required number of years of residency training. Some of the formal requirements are based on and interrelated with some of the key informal requirements involving an individual's personal characteristics discussed below--for example, letters of recommendation and interviews typically center on informal requirements. In defining recommendation letters and interviews as formal requirements, we are simply noting that the letters must exist and the interviews must occur regardless of content.

Informal Requirements

We have already suggested the nature of informal requirements earlier in this chapter in our discussion of the incompatibilities between prevailing stereotypes about women and the personal characteristics and traits MODVOPPP professions seek and attempt to instill in their members. Informal requirements are the personal attitudes and behaviors which involve dedication and commitment to the profession above all other life interests; confidence, certainty, authority, leadership, and managerial ability; decisiveness and an ability to remain cool, calm, and confident and make good judgments and correct decisions under stress; independence and initiative; physical and emotional stamina; detachment and the ability to remain objective about a patient and his or her problems; substantial analytic, reasoning, and problem-solving capabilities; ability to communicate effectively; and a demonstrated knowledge of and interest in the profession and in its professional activities. Informal requirements may also include graduation from certain pre-professional and/or professional schools and letters of recommendation and/or sponsorship from certain important and prestigious individuals in the profession.

Informal requirements are perhaps the single most significant barrier women face as they represent the resource to which women have the least access. Women are typically perceived and described as having less than a sufficient amount or degree of the required professional characteristics--for example they are not decisive enough or strong enough or independent enough; or, they are described in opposite terms--that is, they are indecisive, frail, and dependent. Appropriate informal requirements are critical in admissions and essential in providing the basis for access to and membership in significant informal networks in pre-professional and professional school, post-graduate training, and professional practice.

Funds and Financing Sources

Funds and financing sources are the most obvious resource required for successful access to admissions and completion of MODVOPPP training. Professional education is expensive and requires a big investment and typically more than one financing source. When training is complete, additional financing may be required to start practice in some professions and/or in some forms of practice. For example, in dentistry or optometry, unless a new graduate can associate with an already established active practice, an additional and large investment of money is required to purchase the minimal equipment necessary to set up an office.

Tables R through DD in Appendix G include a variety of informative data on the financing issue. Tables BB, CC, and DD show that a high proportion of students in every one of the MODVOPPP professions (except public health for which data are unavailable) graduates with some indebtedness which ranges from a low of 58% of the pharmacy students to 84% of students in osteopathic medicine. Tables T, U, and Y all illustrate that most students depend on many sources for the non-refundable and refundable (loans) funds they require to complete professional training including their own earnings and savings, parental and spousal contributions, various forms of federal and state aid, private bank loans, and other sources.

Table X data suggests that women appear to have no more difficulty than men in securing access to loans and scholarships in the MODVOPPP health professions schools. With occasional and minor exceptions in veterinary medicine and optometry, women receive a slightly higher percentage of both scholarships and loans than their proportion of total student enrollments. And of all women enrolled, the proportion receiving scholarships and loans is typically as good or better than the proportion of total men enrolled who receive scholarships and loans.

There are, however, some barriers women may encounter in securing access to sufficient funds for professional training which men do not. As earlier noted, many of our women respondents expressed difficulties in obtaining parental support for their educations either because male siblings were given priority for limited funds or because families were not in accord with the women's career aspirations. Married women also may find their husbands opposed to and unsupportive of their career aspirations, and they may have to compete for limited funds if their spouses are also students.

Women may have more difficulty meeting the eligibility criteria of certain funding sources than men. According to some of our women student respondents, private banks are less willing to make education loans to women based on the assumption that they will marry and not practice and therefore are not good risks. The federal military and public health full support scholarship programs and the public health service forgiveness program (all discussed fully in Appendix D, Financial Aid) involve re-payment service agreements which may make them less acceptable to some women than to men. (These are agreements under which a student promises to give one year of practice service for each year of support in school.)

First, the military service agreements require medical internships at military hospitals, and the year of internship does not count as a repayment year. Thus the military agreements are undesirable because they are long. Additionally, among the women we interviewed, military hospitals have a bad reputation as unfriendly environments for women physicians, and this reputation may discourage women from applying for the military scholarships.

Second, the service location assignments are controlled by the needs of the federal programs rather than by the scholarship recipients. Recipients may express preferences among available sites, but they have no guarantee they will receive their first choice. All of the military and public health service federal full support and forgiveness scholarship programs attempt to assign professional spouses to the same area of the country if possible, but only if the spouses graduate at the same time. Some women students we interviewed could not or felt they could not accept these scholarships because present or planned marriages made their mobility and ability to move to assigned service sites questionable.

It appears that compared to single students, married students (and especially those with no children) are at a considerable advantage in financing their educations with non-refundable funds based on spousal contributions. Table Y, for example, shows that a consistently higher percentage of married students' income in all of the MODVOPPP professions comes from non-refundable sources than is the case for single students. For example, 86% of married dental students' income is from non-refundable sources compared to only 72% for single dental students. Correspondingly, upon graduation indebtedness among married students is less than for single students.

We were unable to locate any data on the amount of professional training indebtedness by sex or on the marital status of MODVOPPP students by sex. However, our field interviews suggest that women students are more often single than men, and data in Table II indicating that fewer women physicians than men are married provides some very indirect support for our field observations. If women students are, indeed, less often married and thus less able to depend on spousal contributions for financial support, their access to non-refundable funds is considerably less than men's and their corresponding indebtedness upon graduation from professional school may be higher.

Finally, those women students who are married may have differential access than men to certain funds regulated by school policies. The most important funds at issue are typically those for childcare. Childcare budgets are normally insufficient, and we learned of some instances where women's spouses were not permitted by school policy to stay home and qualify for support as a dependent and to take care of the couple's children. We encountered no instance where a man's spouse was denied dependent support in order to stay home and take care of their children.

RESOURCE BARRIERS FACED BY WOMEN IN THE PROFESSIONAL TRAINING SEQUENCE

Recruitment and Application

> *I had thought for a long time that I wanted to be a doctor. When I finally said something to my high school counselor he looked at me like I was crazy, patted me on the arm and told me I'd be better off forgetting it. I just smiled at him, but then and there made my vow to prove to him that I could do it. (Second year student, female, Medicine)*
>
> *I was always good in science and wanted a career where I could use it and be independent too. When my counselor suggested dentistry, I guess he felt he was suggesting something I wouldn't even consider because he started out by saying, 'Now look, before you say no, hear me out.' (Third year student, female, Dentistry)*

Introduction

Recruitment and application involves the institutions, formal and informal procedures, activities, influences, and decisions which result in an individual being in a profession's applicant pool--or not. This includes the formal and informal recruitment activities of the MODVOPPP professions and schools, counselling and information programs at the high school and undergraduate level, and the informal influences of family, friends, classmates, and personal relationships with individual practitioners in the MODVOPPP professions. Finally, it includes media images of professions and practitioners and the general level of visibility and public images of the professions.

Earlier in this chapter we discussed the educational and socialization processes in our society which serve to track males toward careers, and by extension, toward the MODVOPPP professions in some cases. Those same tracking patterns serve to move females away from careers in general and away from professions in particular including the MODVOPPP health professions. This observation has particular relevance for the recruitment phase of the MODVOPPP professional training sequence. It means that for males active recruitment into the MODVOPPP professions is not really necessary. Through their education and socialization males are almost automatically given access to the information, encouragement and institutional support they need to consider a MODVOPPP career. A notable feature of our interviews with male students, for example, was the near-total absence of any extended conversations about significant features of their considerations of and decisions about MODVOPPP professional career selection and application--as if the process were so automatic that it did not need comment. By contrast, women spoke often and at length about the many people and events involved in their considerations of and decisions to apply to a MODVOPPP profession indicating that the process of considering a career for a woman is a noteworthy one. Since women are typically tracked away from careers and professions, unlike men, they particularly need the information and support of an active set of positive recruitment experiences in order to overcome the negative and limiting biases in the educational system and society in general regarding women in the professions. Given this observation, our discussion here will focus primarily on the MODVOPPP recruitment process as it affects women.

Current recruitment activities vary considerably among the MODVOPPP professions. The professional and educational associations and most of the schools we visited in the best known professions--medicine, dentistry, veterinary medicine, and pharmacy--engage in very few formal recruitment activities. Administrators and admissions officials we interviewed indicated that the applicant to acceptance ratio in their professions and/or schools is already so high that they feel recruitment is unnecessary and possibly even unfair, serving only to increase the number of disappointed and unsuccessful applicants to these professions. The notable exception is in those instances where particular schools have obtained special program funds through the 1971 Comprehensive Health Manpower Training Act for minority recruitment efforts. However, of the schools we visited, only one considered women a minority for recruitment purposes.

In the MODVOPPP professions that are less well known such as optometry, podiatry, and osteopathic medicine, formal and informal recruitment procedures and programs do exist and are, in fact, crucial to the expansion and, in some cases, even the survival of these professions. In this sense, these professions would appear to be particularly attractive and accessible for women applicants. And, in fact, administrators and faculty members in some of these professions did indicate that women were considered a very desirable and highly untapped pool of talent for which they felt they might more successfully compete given the problems and competition they believe women face in being admitted to the larger and better known professions. However, other features of these smaller professions, such as heavy sex-typing and emphasis on the solo mode of practice, do in some cases tend to offset this apparent advantage for women.

Key Resources

The most important resources in the recruitment phase of the professional training sequence are information, personal encouragements, institutional supports, and the informal network. For the prospective applicant, these resources are needed in combination--that is, simultaneously, as opposed to sequentially. For example, in order for a student to obtain the necessary information to consider a career in a MODVOPPP profession, s/he must receive certain institutional supports. In order for a student to move from the decision to apply into the actual application process, s/he may need personal encouragements. Although this overlapping among resource needs occurs to some extent in all the professional training sequence phases, it is particularly crucial in the recruitment experience.

In the recruitment phase, information means, first of all, knowing that a profession even exists. This is a particular problem or barrier for some of the lower profile MODVOPPP professions such as podiatry and osteopathic medicine. Information also means knowing what a particular profession involves--the nature of the work, the range of practice opportunities and settings, the nature of the training experience including length and cost. It includes knowing the formal as well as the informal requirements for admissions to the profession in general and to individual schools in particular--prerequisite courses, work experiences, grade point average, type of student desired, and so on. Based on our interviews with women students, important information for women also apparently includes knowledge of which professions and which institutions are receptive to women in the sense that there are women practicing in the profession and women enrolled in significant numbers in the schools.

The sources for these kinds of information are through institutional supports such as preprofessional school counselling programs and through active recruitment programs conducted by the MODVOPPP schools and professional and educational associations. Media images of professions and practitioners also provide information to prospective applicants. The informal network is another source of recruitment information including the student's friends and peers--the pre-med or pre-vet "grapevine" at undergraduate institutions, for example--and often personal contacts with practitioners in the profession. Practitioners serve as both direct and indirect information sources in that they can actively provide knowledge about the nature and requirements of their work in conversations with prospective applicants or through formal recruitment techniques such as "career" days. They may be indirect information sources simply in the capacity of a role model. Finally--information comes through the personal encouragement system. Family members--particularly if they are also members of a profession--and friends may provide both general and specific information to a prospective applicant.

Our findings indicate that women have reduced access or lack access altogether to some or all of these information sources. At the most basic level, due to the tracking patterns discussed earlier, women often do not seek information concerning the MODVOPPP professions simply because it does not occur to them to do so. For the same reason, the information sources may not seek women as recipients of recruitment information. Because the MODVOPPP professions are so heavily male sex-typed, women often do not see themselves as having a potential place in them. Many of our respondents told us that until some unusual or singular event happened to trigger their imagination, these professions simply did not occur to them as a career option for consideration.

There is another and more complex aspect of recruitment information distribution as it relates to women. Even when a woman does receive information about these professions, the content of that information may have a negative impact on her willingness to consider these professions as possible careers. Many of our respondents indicated, for example, that they considered at length whether they wished to enter a profession and a school with few women. Others indicated that the cost and length of training were serious issues. Many discussed their concerns about the incompatibilities of training and practice during their 20s and 30s with their desire to marry, and bear and raise children during the same period. Some women resolved these concerns by seeking professions which involve minimal training and/or cost or seemed to them most able to resolve the professional/traditional role conflict through reasonable control over practice hours and locations. Pharmacy, podiatry, optometry, and dentistry were all mentioned by women as choices because they solved one or more of these problems. However, it is reasonable to assume that for many women, these features of the professions serve as insurmountable barriers which channel them away altogether.

In the discussion of stereotypes earlier in this chapter, we noted that while stereotypes have a basis in truth--that is, while they reflect reality to some extent, they also tend to change more slowly than reality and are often likely to be slightly outdated. This observation has particular relevance for women regarding recruitment information because, while the stereotypes which characterize the MODVOPPP professions as sex-biased or incompatible with family responsibilities may be accurate to a certain degree, they do not fully reflect many important and recent trends. The professions are changing. They are becoming more flexible in their modes of practice and in some cases in the structure of their training programs. Professions which traditionally have been practiced solo, for example, are increasingly moving to include more group forms of practice. Pre-paid health plans, HMOs, and other institutional forms of practice are increasingly available as a result of federal funds and interest in new forms of health care delivery. These are forms of practice which are attractive and useful to women because they offer a partial solution to the professional/family role problem. However, given that women do not receive recruiting information through formal channels as readily as men, it is reasonable to assume that in some cases they may make decisions on the basis of outdated notions about how some of the professions are practiced and consequently self-select out of applicant pools.

Once a woman does consider a profession as a career possibility, the role of supportive or discouraging influences and experiences becomes crucial in determining whether or not she will apply. Many of the women we interviewed were discouraged by school teachers, counsellors, parents, and family practitioners when they announced their interest in one of the MODVOPPP professions. By contrast, we interviewed no male students who received such discouragement. In some cases males were advised to consider a profession other than their initial choice, but none were ever told simply not to consider a MODVOPPP profession, as were many of the women. Since we spoke with women who had applied in spite of their discouragements, it is reasonable to assume that there are many women who have experienced the same discouragements and ultimately chose not to apply at all.

From our interviews with both men and women, it seems that personal supports are much more effective than formal recruiting efforts in encouraging people to consider the professions and apply to professional schools. In all of the professions we found that the role of parents was the single most important factor in the women's decision to pursue a MODVOPPP career and that it was key in a way that was not true for male students. Males often spoke of parental approval and acceptance as a matter of course, but they never volunteered that parents were a particularly important positive influence. Women frequently mentioned their parents as an active source of discouragement. Men never did. Thus it appears that in the absence of other outside forces, parents are critical to women's application decisions whether positive or negative, but parental influence is of less consequence for men.

Many women also mentioned family practitioners as a source of encouragement, and for some their initial exposure to the profession was through a relationship with a practitioner. These women spoke of the importance of encouragement from inside the profession--from the informal network--and the helpfulness of having someone "who knows" with whom to discuss the work and training experiences. For many women we interviewed this meant a woman practitioner, and women stressed the additional importance of being able to see and talk with a woman and know that it was possible for a woman to consider and enter their particular professions.

It is significant that women also mentioned practitioners in the professions as a frequent source of discouragement, and a recent study of women in dentistry confirms this observation. While both male and female students in the study cited family practitioners as sources of encouragement, males cited family practitioners as their primary encouragement source, and women frequently cited family practitioners as important sources of discouragement.

Encouragements from practitioners seemed to occur more often and be of more importance in those professions which are actively seeking new members such as podiatry, osteopathic medicine, and optometry. This may occur because the smaller, less visible professions have historically had to struggle for survival and therefore depend much more heavily on an informal network to recruit than do the other professions.

Finally, a great many of the women we interviewed in this study talked of an absence of any active encouragement from parents, teachers, counsellors, and others to consider and pursue the professions in which we found them. For women, it appears that a lack of active encouragement, whether from their family or the institutional support system of teachers and counsellors, is tantamount to active discouragement. Due to the other barriers encountered by women, ranging from "tracking out" of MODVOPPP careers to reduced availability of information, substantial encouragement is very much needed to overcome the overall disadvantages women face in seeking a MODVOPPP career.

Two other resources have some bearing on the recruitment phase, particularly for women. Many of our women respondents indicated that they experienced difficulty in obtaining financial support from their families either because there were male siblings whose educations received priority and/or because, in some instances, parents simply were not supportive of their daughter's pursuing an advanced professional education. Other women indicated that they were reluctant to incur the considerable indebtedness that a MODVOPPP education typically entails. For example, many women in pharmacy, in fact, gave lower educational costs as one reason for selecting that profession over medicine.

Meeting formal requirements is not typically a problem for the women we interviewed. However as we earlier noted, the traditional tracking of women out of math and science courses at earlier stages in their educational training results in a reduced number of women who are even potential candidates for the MODVOPPP applicant pools.

In spite of these many barriers, women have been appearing in MODVOPPP applicant pools in significantly increasing numbers in the last eight years, and the percentage of women admitted to the schools has also risen. Most admissions officials we interviewed explained that rising enrollments of women were a direct result of their increased representation in the applicant pools, but they were usually unable to give any reasons for the increases in the applicant pools and never indicated that the school was in any way responsible. However our data indicate that there are actions schools take, whether intentionally or not, which may be responsible for some of these increases. Our data show a cycle or pattern developing in the applicant/admission processes of health professions schools. When an institution receives a relatively high percentage of women applicants in one year and admits a relatively high number of women to its first year class, almost without exception the following year will see an even greater increase in the number of women applicants and admissions to that school. This would seem to indicate that (1) an informal network or grapevine may be developing for women concerning those professions and schools which are most responsive and accessible to them and/or (2) perhaps as the male sex-typing of the schools and professions begins to give way, women more often see these schools and professions as viable options for their future careers.

While these observations are of interest in that they are based on apparent trends in the recruitment/admissions process, it must be remembered that our information is derived primarily from female MODVOPPP students. Their observations concerning the barriers they faced in seeking information and support in pursuing their health professions careers are of significance because they are women who have been successful in overcoming the barriers--in obtaining enough of the crucial resources necessary to consider, select, and apply to a MODVOPPP professional school. Our study was not designed to identify and interview those women who, for whatever reasons, either abandoned their aspirations for a MODVOPPP career or were unsuccessful applicants. In short, our findings are based on the statements and observations of women who did not find barriers--considerable as they may be--to be insurmountable. Yet these women readily do acknowledge--and in some cases with impatience or anger--that the barriers are there.

Admissions

> *Everyone we interview is qualified based on their grades and test scores. They could all do the work. I use the interview to find out who they are, how they think, how they present themselves--are they confident, assured, would they make a good representative of the profession? Most of all I look for dedication and commitment--are they willing to put their profession first? You really have to be 100% dedicated to be a good DO. (Associate Dean, male, Osteopathic Medicine)*

> *Overall the women are our best and most qualified applicants. Their grades are better, and perhaps because of all the discrimination they run into as young girls they seem more determined to get in and really do well. The men usually have more prior work experience with animals, and we count that heavily in admissions. But we know that it's harder for women to get summer jobs on ranches and in vets' offices and other places so we also include experience with riding horses or family pets. Some of the women we have admitted were terribly impressive in their interviews because they showed such a sensitive and keen ability to observe and respect animals. (Administrator, male, Veterinary Medicine)*

Introduction

Admissions involves the formal and informal requirements and procedures MODVOPPP schools establish and use to screen, narrow, and ultimately select from among their applicant pools those candidates considered most desirable as future members of the professions. From the individual applicant's point of view, admissions is the key access point to the entire professional training sequence.

The admissions process presents some particularly difficult problems for all MODVOPPP schools and professions. Principal among these is the fact that in recent years, the applicant pools for all professions have been increasing at a faster rate than the number of places available in first year classes. Applicant to acceptance ratios average almost three to one in medicine, for example, and almost nine to one in veterinary medicine. In some of the most desirable and sought after medical schools, these ratios may reach as much as twenty-five to one. Several of the MODVOPPP educational associations--those in medicine, osteopathic medicine, dentistry, and podiatry--have developed centralized application services in recent years which enable students to submit applications to as many schools as they wish by completing a single application and paying a sliding scale fee (see Table 4, page 65). These services are also designed to assist participating schools in the task of managing large numbers of applicants, but they may have created their own set of problems for the schools by making multiple applications easier for applicants and thus increasing the number of applicants each school must consider. Thus the MODVOPPP schools have had to create admissions procedures and structures that can deal efficiently but fairly with the increasing numbers of applications they receive.

This problem of increasing numbers of applications and applicants is compounded by the fact that ever increasing percentages of the candidates in all MODVOPPP applicant pools present uniformly impressive qualifications for acceptance to the schools, particularly in the area of formal requirements. For example, over one-third of all medical school applicants in 1973 had "A" averages. Ten years earlier, only 12% did. Similarly, in professions which have and widely use professional aptitude tests, average test scores have also been increasing over the years. Again, to cite medicine as an example, the average Medical College Admissions Test (MCAT) scores of accepted applicants to medical schools 20 years ago equal or fall slightly short of the average scores of today's rejected applicants. As a result of these "improvements" in the applicant pool, most of the schools we visited rely increasingly on more subtle, subjective, and less quantifiable criteria than grades and test scores for applicant screening and selection. Candidates' personal characteristics, knowledge of the profession, prior work experience in the profession, and contacts with and support from members of the profession's informal network all have become increasingly important.

Finally, as the entire health care delivery system is increasingly subjected to closer scrutiny, and as the need for new health care delivery systems become more apparent, the qualifications and attributes sought in future members of the health care professions are changing and they have become less clear-cut than they once were. This is particularly true in medicine, for example where personal qualities such as assertiveness, analytic abilities, and scientific aptitudes could formerly be cited by admissions officials as the most important characteristics for applicants and future medical practitioners to possess. However emerging consumer and other demands for health care that is more humanistic and responsive to individual client needs seems to place greater emphasis on personal characteristics such as sensitivity and interpersonal communication skills.

Different professions and different schools within them address and cope with these problems and demands of admissions in various ways. Medicine, for example, is currently in the process of radically revising its professional aptitude test in an effort to make it a more useful tool in predicting clinical performance and in profiling applicants' personal characteristics. Veterinary medicine has a professional aptitude test which only three of its eighteen schools use because administrators at most of the schools feel the test is not useful and merely taps the same skills and aptitudes which are reflected in applicants' grade point averages (GPAs). Reportedly other MODVOPPP schools share this reservation regarding the usefulness of their professions' respective aptitude tests and as a result do not use them. In general, however, based on our study visits to 27 schools, it appears that there is a fairly common and uniform admission system used by most schools in the MODVOPPP professions with the notable exception of public health. That system typically involves the following key components: designation of an official and/or committee responsible for the admissions process; establishment of criteria and procedures for screening applications to narrow the applicant pool to those candidates who will receive serious consideration; procedures and criteria for making final applicant selections; and in most cases, the development of formal and/or informal appeal provisions to protect both applicants and institutions against human and systemic omissions, oversights, and errors in the screening/selection process.

The great majority of MODVOPPP schools we visited use committees to administer the admissions process, although the structure of these committees varies considerably from profession to profession and school to school. Variations in committee structure include size; membership mix and composition (preclinical and clinical faculty, administrators, students, community clinicians; age, ethnic group, sex); membership selection method (appointment, election, volunteer); and membership tenure (rotating, continuous). These variations are important if applicant interviews are conducted as part of the admissions process since they directly determine the characteristics of those who will conduct the interviews. These variations, therefore, influence the perspectives and expectations which are the basis on which applicants are evaluated.

The MODVOPPP schools we visited presented significant variations in the criteria and procedures they use for screening, narrowing, and ultimately selecting applicants for admissions, but generally the criteria include all or some combination of the following: (1) undergraduate grade point average (GPA), (2) professional aptitude test scores, (3) letters of recommendation, (4) written personal statements by the candidates, (5) prior experience or exposure to the profession, and (6) personal interviews. Screening and selection procedures also vary but most commonly involve a three stage process.

First, quantitative information--usually GPAs and aptitude test scores--is used to establish minimum qualifications for further consideration. Using this comparatively objective data, a cut-off level is typically established. Applicants below the minimum objective performance level are eliminated from further consideration and, at this point, usually notified of their rejection. Two of the schools we visited use a quantitative cut as their prime and often only method for screening and selecting applicants. In these cases, such additional admissions components as personal statements, interviews, and so on were used only for special cases--minority candidate admissions, applicants with a particularly aggressive and/or important professional sponsor, and applicants with notable disparities between their GPAs and professional test scores.

Stage two normally involves further evaluation of the remaining applicants on the basis of qualitative and more subjective data such as letters of recommendation, personal statements, prior experience or exposure to the profession, contacts in the profession, and interviews. These qualitative considerations are crucial because the applicants who survive the first step in the evaluation process are often remarkably equal in their objective qualifications. It is also at this step that applicant access to certain key resources is critical.

Step three involves final consideration and selection of candidates for admissions from among those who have been interviewed, submitted personal statements, and so on and have met the criteria used for evaluation in step two. At this stage some schools may add points or a consideration bonus for such factors as prestigious undergraduate institution, race, extra-curricular activities, veteran's status, or other characteristics of interest to the school. (We visited only one school which gave extra points for being a woman, although several did for maturity and breadth of background and prior work experience, and these criteria tend to work to women's advantage.) The procedures schools used in making final selections at this stage are important because, as is the case with the admissions committee structure, they heavily influence the final composition of the applicants accepted for admissions.

Finally, schools normally have some procedures for applicants to appeal their rejection in preliminary screening and/or in final selection. In all cases we found these to be informal procedures--for example, repeated telephone calls directly to the dean either by the applicant and/or by a sponsoring practitioner in the profession. And in no instance were such procedures published in the schools' brochures, catalogues, or other official information sources.

Key Resources

The resources which are critical for applicants in admissions are: information, formal requirements, informal requirements, access to the informal network, and institutional supports. In most cases financing is not a critical issue, and personal encouragements are not operative at the admissions stage.

The primary formal requirements in admissions are competitive grade point averages and professional aptitude test scores, and these are usually used as the basis for the first applicant pool screening. Most admissions officers and other administrators we interviewed suggested that women are extremely competitive on formal requirements and available data substantiates their comments. For example, a recent DHEW study of the undergraduate GPAs of accepted male and female medical applicants in 1972-73 indicated that men and women had the same average math and science GPAs and that women's total GPA was slightly higher. In some of the other professions administrators confirmed that women applicants' overall GPAs were higher but frequently slightly lower in math and the sciences.

Most professional aptitude tests used in the MODVOPPP professions consist of several parts including basic sciences, mathematics, verbal ability, general knowledge, and perhaps a profession-specific section such as the Perceptual Motor Ability (PMAT) section of the Dental Aptitude Test (DAT). Women typically score slightly lower than men on the math and science portions of these tests and usually higher on the verbal and general knowledge sections. However available data suggest that these variations are small--typically about 20 to 30 points on a scale of 800, for example (see Table LL, Appendix G, Medical College Admissions Test Scores)--and many administrators we interviewed insist that such differences are not significant. However most of the schools we visited consider the math and science portions of applicant GPAs and test scores important and accordingly weight them more heavily in the screening process. Thus small differences become major handicaps for women at such schools because the cumulative effect of the differences and the weighting screen out a larger proportion of the women in the applicant pool.

Informal requirements are often of critical importance in admissions because they are part of the subjective qualifications upon which second step evaluations are heavily based. Informal requirements include personal characteristics deemed necessary in the MODVOPPP health professions such as assertiveness, analytic ability, decisiveness, commitment and dedication, management abilities, initiative, and so on. The extent to which applicants meet or lack these necessary informal requirements is most often determined through the interview component of the admissions process and, to a lesser extent, through letters of recommendation and personal statements.

Both men and women students characterized the interview portion of the admissions process as difficult, but women expressed this sentiment much more frequently and much more intensely. The informal requirements sought in interviews are characteristics not typically associated with women or with women's social roles in our society. Thus women reported to us that they often found themselves needing to maintain a delicate balance in interview situations, for example. They felt that if they exhibited the necessary informal characteristics of assertiveness and independence, they would run the risk of being considered unfeminine and unnatural; and if they did not exhibit them, that they would be judged unqualified for the profession. Women reported that they were also at a disadvantage in admissions interviews by virtur of certain stereotypes sometimes expressed by interviewers--reports which were confirmed by many of our faculty and administrative respondents. These included assertions that women applicants seek admission because they are "libbers" who only want to prove a point or because they are only interested in finding a "good catch" for a husband. In this latter regard, several of our administrative and faculty respondents indicated that they felt particularly attractive female applicants are especially vulnerable.

For women the admissions interview also frequently involves a set of what are known as "women's questions"--questions about marriage and family plans, questions about intentions regarding practice activity/inactivity, and so on. Many women reported interviews with openly hostile interviewers who questioned their very presence in the applicant pool on the grounds that they were taking a man's place, that MODVOPPP professional training was too expensive to waste on a woman given the likelihood that she would not practice, and so on. That these women's questions exist, coupled with the presence of open biases against women on the part of some admissions personnel, indicate that women are less likely than men to meet the informal requirements so crucial for admission to the MODVOPPP schools.

Information is important in the admissions process, particularly in preparing personal statements and in presenting one's self in an interview. Applicants benefit from knowing, for example, the differences in emphasis in training and curricula from school to school so they can tailor their statements and interviews accordingly. Some medical schools, for instance, are oriented toward producing graduates interested in research while other emphasize a commitment to teaching or a preference for family or community practice. Different dental schools emphasize different techniques. Pharmacy schools may emphasize retail practice or hospital pharmacy. In some schools, certain non-required undergraduate courses are favored over others; prior experience in various settings is differentially useful; and so on. In schools which use and emphasize interviews, applicants are at an advantage if they know what attitudes and responses are most favorably received.

Some of this information is directly or indirectly available through school catalogues and other publications. However much of it is not, particularly in the smaller professions, and applicants are then heavily dependent on their access to preprofessional school and professional informal networks to obtain the information they need. In some professions such as podiatry or osteopathic medicine, for example, personal contact with and recommendation from a practitioner is essential both for information about the profession and possibly a particular school and as a means of adding extra weight to the candidates application. Considerable advantage is typically gained by applicants who come to the applicant pool with the backing of a practitioner. This access to and support from the informal network is typically more difficult for women to obtain, and the absence of a sponsor at some schools may seriously interfere with chances for admission particularly if a sponsor is an essential part of an informal appeals procedure as is most often the case. The informal network may also be an important limiting influence on women's admissions in certain schools where members of the profession exercise direct and indirect forms of pressure to keep women's enrollments at "acceptable" levels.

Institutional supports in the form of admissions committee membership composition, interview formats, and final selection procedures are also key requirements for the admissions stage of the professional training sequence--especially for women. Due to the sex-biases and negative stereotypes about women often held by male members of admissions committees, it is usually to women's advantage when admissions committees have a diversified composition. If members represent different academic disciplines and professional emphases and interests, different races, ages, and sexes, if student are permitted on the committees; if election rather than appointment is the most prevalent form of selection; and if membership rotates or changes fairly frequently, individual biases and preconceptions about what type of applicant is most desirable are more likely to cancel each other out and to neutralize the impact of any single point of view. Thus the more personal and professional diversity among committee members, the greater the likelihood that non-traditional candidates such as women and minorities will be evaluated on a relatively equal basis with other candidates, particularly with regard to their informal requirements and characteristics.

For similar reasons, multiple interviews are preferable to single interviews as they provide both the school and the candidate with several opportunities to evaluate each other through differing perspectives. Women respondents in our study repeatedly mentioned the positive effect of having more than one interview, especially if that gave them an opportunity to talk with women faculty members and students as well as with male faculty or administrators. In this regard, many women told us that their final choice for attendance among alternative schools was often based in large part on their interview experiences at the various institutions. In many cases women indicated they decided against particular schools due primarily to unpleasant experiences in openly hostile interviews. Thus the interview may represent an additional screening step for women in the admissions process at some schools whether intended or not. Some institutions may, in fact, screen out women who might otherwise be interested in enrolling by creating interview environments which turn them away.

Finally, as a varied admissions committee membership is institutionally advantageous to women by helping to neutralize any strong biases against them, certain procedures for final selection create the same potential advantage. These procedures include opportunities for all members of the committee to share information and impressions about all of the applicants and to participate in selection through voting or other consensus mechanisms as opposed to systems where each committee member is individually responsible for selecting some of the final accepted applicants.

Financial resources are not generally an important factor in the admissions process. The exceptions may be private institutions in the smaller MODVOPPP professions. These institutions often have small endowments, limited public funds, and thus a shortage of financial aid resources for prospective students. In such schools, applicants who are not dependent on the institution for financial support frequently have an advantage in admission. To the extent that access to adequate financing is in some respects more difficult for women than for men, financing may operate as a barrier in admissions in such institutions.

Rapidly increasing enrollments of women in all of the MODVOPPP professions in the last several years indicate that women are making significant gains in pursuing health professions training, and that admissions is not the critical problem it once was. In all of the MODVOPPP professions the percentage of women appearing in applicant pools has been steadily increasing, and the proportion of accepted women applicants is normally slightly higher than their representation in the professions' applicant pools. These statistics would indicate that in spite of barriers in the admissions process, other factors are beginning to offset them to some extent.

However these are profession-wide trends and statistics, and they often obscure problems and prejudices which still are or may be operative at individual institutions. For example, in 1974-75 women represented 22% of medicine's profession-wide first year class. 1974-75 was also the first year that in every individual medical school women represented 10% or more of the first year class, suggesting that many schools still lagged behind the profession-wide average. Several schools we visited in this study had the same number of first year women students in three or more successive years which, while possibly coincidental, might also be indicative of informal quotas operating in the admissions system. Only individual school by school data comparing the characteristics and qualifications of men and women applicants to men and women first year students can more thoroughly determine the extent to which the admissions sytems in various schools may or may not operate to women's disadvantage.

Preclinical/Clinical Training

> *I realize that it must be impossible being a girl here. The guys act pretty immature at times, and you can't blame them really. But no one should be treated like some of these women are. The jokes are cruel, but they are funny. I don't know. I'm just glad I'm not a woman here. (Third year student, male, Optometry)*

> *Yeah, I think you do find in this school, there are situations where the male students and professors try their best to be crude or gross or something, trying to make you show that you're a weak feminine thing and you're either gonna blush or faint or something, and they wait to see you react, so you just sit there and concentrate on keeping a kind of cool look on your face while inside you're burning. Then for the rest of the class you can't deal with anything but keeping anger or shame inside until the class is over and you can get out of there. (Third year student, female, Veterinary Medicine)*

Introduction

With the main exception of public health, health professional education emcompasses two basic kinds of training: preclinical and clinical. The training sequence is designed (1) to teach students the knowledge, skills, and techniques needed for competent professional practice; (2) to develop and/or refine the personal characteristics and traits considered necessary and appropriate for the professional practitioner; and (3) to lay the foundation for the informal professional collegial networks which are crucial components of practitioner interaction in all of the MODVOPPP professions. In order to accomplish these three objectives, students in these health professions are required and expected to commit extensive amounts of time and energy to their education, and preclinical/clinical training was consistently characterized by student and faculty respondents in this study as intense, competitive, taxing, stressful, and anxiety provoking.

The preclinical stage of the MODVOPPP professional training sequence typically consists of basic science courses which provide the fundamental knowledge on which the MODVOPPP professions rest. Preclinical training is similar in many respects to preprofessional science and math education.

Preclinical courses are principally taught in lecture settings augmented by laboratory experience. Generally preclinical lab and course work take place on-site at the professional schools. Preclinical faculty are usually academicians--PhDs in various biological and physical sciences whose professional responsibilities are divided between teaching and research. Student performance in the preclinical phase is evaluated principally through examinations which are generally in objective testing formats.

By comparison, the clinical phase of health profession education focuses primarily on learning through practical experience augmented by some classroom work and required readings. The objective of the clinical phase is to give students knowledge, understanding, and practical experience in the application of the specific skills and techniques of their professions and to teach them the procedures of patient care including evaluation, diagnosis, treatment and follow-up (not as important in pharmacy and public health which are less or not directly patient-oriented). In addition, the clinical phase is designed to teach and refine the personal skills and characteristics needed by health professionals such as assertiveness, initiative, self-confidence, curiousity, sensitivity, management abilities, and so on. Most commonly, clinical instruction is given in small group settings to give individual students adequate opportunities to practice skills and provide opportunities for close and continuous student/clinician interaction.

Clinical training takes place in a variety of settings including hospitals, laboratories, clinics, private practice environments, and various non-traditional health care settings such as mobile units, prison hospitals, and so on. The principle instructors in the clinical phase are active MODVOPPP practitioners and clinicians who, particularly in the patient care fields other than medicine, teach on a part-time basis and have other professional practice responsibilities in addition to their teaching commitments. Evaluation of students' clinical work is more subjective than in the preclinical phase. Much of it is done by individual clinicians who evaluate a student on the basis of both his/her technical skills and knowledge and on the presence or absence of desired personal traits and characteristics. While some objective testing is used for clinical evaluation, it is the subjective aspects of evaluation which are particularly critical.

MODVOPPP schools have traditionally divided the preclinical and clinical stages of professional training into blocks of two years each. However in recent years schools have increasingly been exploring alternatives to this rigid two-plus-two structure, exploration which was partly stimulated and has been encouraged by the 1971 Federal Comprehensive Health Manpower Training Act funds. Many schools have shortened and condensed their preclinical/clinical curricula into three years; a few have also made extended five year programs available. Many schools are experimenting with various methods of inter-disciplinary team teaching for medical, dental, pharmaceutical, nursing, and other students. Increasingly, schools are organizing preclinical training around health problems and symptoms or around organ and other body systems rather than into the traditional science disciplines of anatomy, physiology, and so on. Finally, in a number of schools we visited, efforts to introduce students to patient care early in their training have been instituted in recent years with the intent of making preclinical studies more immediately useful and relevant and thus blurring the traditional two-plus-two year distinction in the preclinical/clinical stages of training. Therefore, although we use the distinction preclinical/clinical in the discussion that follows, it should be understood that no longer does all preclinical training necessarily precede clinical training as was once the case.

Key Resources

The preclinical/clinical stage of the professional training sequence is perhaps the only step in which students need access to all seven key resources, though not all of the resources are equally important. To some extent, however, students need access to personal encouragements, formal requirements, informal requirements, information, informal collegial networks, institutional supports, and funds and financing sources. Predictably, access to one resource may depend in part on access to another so that there is a built-in interdependency within the resource system. This discussion will focus particularly on resources as they affect female MODVOPPP students and on the ways in which women may have reduced access, or be denied access, to them.

Due to the demanding and stressful nature of MODVOPPP education, all students need personal encouragements to help them sustain a sense of confidence, purpose, and legitimacy at particularly difficult points in their training. This is especially true for women students because they are usually a minority in all of the MODVOPPP professional schools; and, as we have discussed earlier in this report, certain social and professional attitudes and biases concerning women and their social roles contribute to women's sense of isolation in professional school settings and create special pressures for them to continuously prove their legitimacy and competence. For these reasons, while women may need even more personal encouragements than their male peers, in fact it appears that they receive less.

Despite recent increases in female enrollments in all MODVOPPP schools, women are usually still in a distinct minority in their educational environments. This simple lack of numbers contributes to the difficulties women students express in forming friendships with other women, in receiving reinforcement and support from each other, and in becoming either smoothly integrated into the informal friendship network of their male peers or forming their own networks with the other women in their schools and classes. Their isolation is exacerbated when students move into the years of clinical training because this training occurs primarily in small group settings and means that the relatively few women in MODVOPPP schools and classes are even further dispersed.

Because of their minority status and relative isolation in the MODVOPPP schools, many of the women students with whom we spoke said that they were lonely much of the time, and many had resigned themselves to being lonely for the duration of their professional training years. Many indicated they were hesitant to approach other women in their schools to form friendships and friendship groups out of fear that such association would lead to open resentments from male faculty and students and/or to charges that the women were banding together to create some form of pressure group to gain special considerations or treatment as women. In some of the schools we visited, male students confirmed these fears by expressing their belief that women's get-togethers such as weekly dinners or other forms of social activity were simply a form of undesirable organizing among the women. And in some institutions we found a distinct and noticeable male "backlash" against the women who tended to socialize with other women resulting in more than normal exclusion of these women from male friendship, study, and informal rap sessions about school and classwork.

Finally, many women spoke of difficulties in establishing or maintaining social relationships with their male peers. They were often hesitant to date fellow students because they feared that any resentments or awkwardness resulting from dating relationships and situations would create tensions and problems over the long periods of time and the close contact all MODVOPPP professional students have with one another. Men also frequently expressed hesitation or a lack of desire to date women students for similar reasons. In small, free-standing institutions these problems are particularly severe for women because the wider resources of a university student community are not available to them. Even in university settings, however, because of the time and energy demands of health professional education, all students are cut off to a certain extent from their peer relationships outside of the health professional school setting. For women in particular this means that they must often face the prospect of a relative absence of both women friendships and male social relationships for the duration of their professional training.

In general, women students expressed little concern over or difficulty in meeting formal grading requirements in the preclinical stage of training--an interesting contrast with male students for whom anxieties about classroom performance and competition often ran high. Faculty and administrators at virtually all of the schools we visited volunteered that during the preclinical years, in particular, female students compete very favorably with males in terms of comprehension and retention of course material. Many asserted that women were, in fact, their best students. However, to the extent that a significant proportion of MODVOPPP schools utilize various forms of pass/fail and non-letter or non-point grading systems, the degree to which women students excel in preclinical course work may not be reflected in their files and in the total evaluation of their work--

evaluations which are the later basis for placement in graduate training and referral to jobs and associateships with active practitioners. On the other hand, the pass/fail systems are typically favored by most students, and for women they may have an advantage in certain instances. Several women students we interviewed mentioned incidents--particularly in laboratory courses and later in clinical training--where they felt that letter or point grades they were given were unfair and too low. In such instances when they questioned their instructors, they often received no explanation for their marks or in some cases only the justification that the particular practitioner would never give a woman an "A". Pass/fail systems can serve as a protection in cases of such extreme bias.

In the clinical stage of training women expressed greater difficulties in meeting the formal requirements of good clinical performance evaluations since formal requirements in clinical training are based largely on one's informal characteristics. That is, students are evaluated in part on the skills they demonstrate in performing certain exams and procedures on patients, and clinical training also includes some objective examinations, lecture and discussion sessions, and so on. However most clinical evaluations are heavily subjective and based on the supervising clinician's assessment of a student's self-confidence, patient management, decisiveness and quick action in an emergency, assertiveness, and other personal characteristics and behaviors; and these are not the qualities typically associated with women. To the extent that women are believed to lack these traits and/or to have greater difficulty in acquiring them, they are judged as lacking in a critical set of requirements for successful professional practice. The women we interviewed are keenly aware of this, and most spoke often and with great intensity about constantly feeling a need to continually "prove" themselves--and, as a representative of all women--to do well and not be an example others could cite that women are not able or appropriate MODVOPPP health practitioners.

The extent to which women have reduced access to various types of educational and other insider information during their preclinical/clinical years is a direct function of their access or lack of access to other resources such as informal requirements, necessary institutional supports, and the informal collegial network. Many women students, for example, mentioned instances in clinical training where male patients and/or practitioners expressed reluctance or complete unwillingness to permit them to observe and/or perform certain types of examinations and procedures, particularly those involving health problems related to the urinary/genital tracts. In this regard, some women noted their belief that it is more often the practitioner/clinician than the patient who is the controlling actor in determining whether a woman's gender will be an obstacle with certain male patients--that the way in which the practitioner defines the situation and introduces the woman to the patient is key to her access to the learning situation. For example, if the clinician says, "This is Dr. Smith, she'll be working with us today", the patient must take the initiative to voice objections to the presence of the woman and frequently will not do so. On the other hand, if the clinician says, "This is Miss Smith, you don't mind if she examines you today, do you?", the patient is invited to voice his objections, thus increasing the chances that Miss Smith will not be permitted to observe or conduct an important procedure or technique. Clinicians' own modesties and/or sense of impropriety about women as practitioners thus not only reflect their beliefs that women do not have the appropriate characteristics to be a MODVOPPP professional--they may also deny women the opportunity to experience a full range of educational experiences in training.

Because women are almost inevitably a minority in professional schools, their gender makes them self-conscious and conspicuous. This conspicuousness is often increased by the attitudes and actions of faculty members through the use of such by now well-known techniques as the inclusion of "nudie" slides and/or sexual jokes and innuendos in lectures, classes, and laboratory settings. Women students we interviewed reported repeated instances in which they were singled out, often in an unflattering manner, by faculty members and clinicians at both the preclinical and clinical stages of training. For example, women frequently cited cases in laboratory work where they were told their work was "pretty good for a girl"--or in cases in lectures and classes where requests for further information or elaboration of a point made in a lecture received responses such as "I guess this is a difficult concept for a girl to understand." Because of the overwhelming male majorities in all of the MODVOPPP professions and educational institutions, women students and professionals are often mistaken for nurses, clerks, lab technicians, and/or paraprofessionals who are typically women. While this is understandable, women pointed out that male faculty and clinicians rarely took any steps to correct these misconceptions.

These examples are illustrative of just a few of the many ways in which women are continually reminded of their uniqueness in the professional school setting. Because many of the reminders are also unflattering and in a sense challenge a woman's right to be present and/or challenge her competence and abilities, some women reported that the unavoidable and consequent self-consciousness they feel is distracting to them and absorbs energy and concentration from the educational material being presented. These distractions may result in a loss of educational information and experience. In addition, some women told us that at various times during their professional education the tensions created by these negative reminders of gender and isolation became so great that they found it necessary to either "check-out" for brief periods in the sense that they found it difficult to focus on their learning tasks or, in some cases, to absent themselves from the school environment by skipping classes or even entire days in order to replenish their energy and psychological/emotional reserves before returning to the pressures and anxieties of their schools. These periods of absence, whether a lack of attention in class or a lack of attendance or both result in lost educational information and experience.

When sex-biased faculty attitudes and behaviors are openly expressed, they may contribute to denying women access to the informal professional collegial networks which begin to develop among male students in professional schools and also to the opportunity to fully develop needed personal, informal requirements as well. When male faculty members actively engage in behavior which singles out or belittles women, or if the faculty permit and/or condone such attitudes and behaviors among male students and to some extent patients, they help create an overall environment which communicates to women that they are less welcome and less legitimate than men in the MODVOPPP health professions. Practitioners/teachers serve as role models, particularly in clinical training. If they openly express or permit sex-biased attitudes and behaviors in this role, they communicate to male students that women should, in fact, have to repeatedly establish their legitimacy and competence as students and later as practitioners. Additionally, if faculty/clinician attitudes permit and/or encourage male students to question the presence and legitimacy of women in the professions, the combined impact on women may be to undermine the self-confidence, assertiveness, and authority women perceive in themselves and which all MODVOPPP students are expected to develop, refine, and display. To the extent that women's experiences in the MODVOPPP professional schools serve to erode or limit the development of these informally-required characteristics and behaviors, the sex-biased attitudes and behaviors which male faculty members and students express toward women are extremely dysfunctional in terms of the MODVOPPP professions' objectives to train practitioners with both the necessary technical skills as well as desirable personal traits to be competent representatives of the profession.

Institutional supports is another resource to which women may have reduced access or lack access altogether. At the most basic level, because MODVOPPP schools are traditionally male-oriented institutions, physical facilities, services and programs which accommodate the special needs of women students are usually inadequate or lacking. These resources include those directly related to training performance and opportunities such as gloves, gowns and lab coats in women's sizes and adequate on-call sleeping facilities. They also include supportive services and programs such as day care, sufficient women's housing, counselling services for women, health services which consider women's needs, and non-academic features such as social programs and informal activities which are either appropriate for both men and women or cater to women's particular needs.

In this regard, reduced access to certain physical facilities in turn contributes to a loss of educational information for women. In clinical training students are introduced to certain diagnostic and surgical procedures and techniques which are presented in surgical settings. Often both formal and informal discussions of these procedures between students and clinicians takes place in settings such as pre- and post-operation scrub and shower rooms. If these facilities are segregated, women simply do not have access to such discussions and miss valuable information and understanding. Even when MODVOPPP schools are successful in providing adequate and equal facilities, programs, and services for their women students, they often have no way of maintaining this access when students move to locations outside the school such as clinics, private practice settings, or field sites for parts of their clinical training. In several schools we visited this problem was further compounded by the fact that some of the off-site training facilities would not permit the presence of women students, and these facilities also offered the only opportunity to learn certain procedures and techniques. In those instances women were totally denied access to a critical part of their training experience.

Professional school faculties, an important potential source of institutional support, are predominantly male in all of the MODVOPPP schools. The female faculty members who are present are usually concentrated at the preclinical level and are typically academicians rather than practitioners. Thus women respondents often said that while these preclinical female faculty members may be important sources of personal support, they do not provide the most relevant role models for women students simply because they are not themselves practitioners. In addition, support and encouragement are perhaps more important at the clinical level where the demands made on students are less familiar to them than in the preclinical phase and where the need for role models after which students can pattern their professional behavior is even more critical. Because the clinical faculties are even more male than the preclinical, which usually results in an overall increase in teacher biases and stereotypes concerning women, encouragement and support in the form of appropriate role models and reassurance through both implicit and explicit faculty behavior towards students is less available to female students. Women respondents repeatedly mentioned as problems not only the lack of role models during clinical training but also the presence of both subtle and overt discriminatory attitudes on the part of male faculty toward female students.

The institutional supports which are helpful in enabling some women students to accommodate the competing demands and rigors of their student and wife/mother roles were rarely or never available in the schools we visited in this study. Flexible curricula structures which permit a student to accelerate learning into a three-year program were the most common and are useful because they enable women to more quickly complete training and sequence their student and traditional wife/mother roles rather than engage in them simultaneously. Extended curricula programs of five or more years which ease the demands of simultaneous roles were available in only one school we visited and, by extension, we would assume that this is a rarely available option in most MODVOPPP schools. Part-time attendance was not available at any institution we visited and is unlikely to be an available option at any MODVOPPP school accepting federal capitation funds under the Comprehensive Health Manpower Training Act of 1971 since those funds are only available for full-time students. Thus schools are reluctant to permit part-time training because they are unwilling to lose the capitation money part-time students represent.

Finally, adequate financing during the preclinical/clinical sequence is, of course, crucial. The extent to which adequate funds and financing resources may be less available to women professional students is discussed earlier in the Resources section of this chapter and in Appendix F.

Women's experiences in preclinical and clinical training and their greater difficulties in obtaining access to all of the resources needed to succeed and compete in this stage of the professional training sequence were cited by some of our study respondents as among the key reasons women presumably demonstrate higher attrition rates in MODVOPPP schools than men. The only reasonably reliable data we were able to obtain on men's and women's attrition rates is in medicine. A comprehensive study of medical school drop-outs performed over ten years ago did show considerably higher attrition rates for women students with most of the attrition attributable to "personal reasons". More recent and more limited data suggests that the gap between men and women medical students is closing and that first year attrition rates in the profession-wide 1973-74 class were comparable for men and women. The same data shows some, but little difference in the 1972-73 and the 1971-72 classes at the end of school year 1973-74. We believe this drop in attrition rates is of critical importance because it parallels and corresponds with increasing enrollments of women in medical schools during these same years. The coincidence of these factors may suggest that the mere presence of more women students in professional schools and classes is one of the single most instrumental factors in making professional school training a more comparable experience for men and women and thus in giving women greater access to the resources they need to successfully complete their professional educations.

Postgraduate Training

> *My residency is so exciting...I want to be at the hospital as much as possible to be sure I don't miss any unusual cases, but you know they can come anytime and I just can't do it. I just can't. My son has been just great these past years, but I have to manage and really, I guess I want to be home sometimes. I feel like I'm missing out on whole chunks of his life by being at the hospital as much as I have to be. But to hang around for those possible unusual cases just doesn't make sense for me. Some of the guys do that a lot, and sometimes when I come in and hear about a really exciting case that came in in the middle of the night I feel really awful that I missed it. But that's just the way it has to be for me. (First year resident, female, Medicine)*

> *When I started my residency it was like starting all over again in a way. You know after four years with the same group of people and in the same school and hospital, all of a sudden I had to learn the ropes and who was who all over again, plus I was expected to actually do the work of a doctor. I was a little nervous, but the surgeon I was working under really helped. We were standing around the sink doing a pre-op scrub down before my first operation and he just launched into telling me about which nurses I could rely on for what kinds of things, who to go to to get certain things done, the best ways to approach specific people in the department...you know, all that kind of stuff. And it really helped me know what to expect and how to react. (First year resident, male, Medicine)*

Introduction

Postgraduate training is offered in all of the MODVOPPP professions as the part of the professional training sequence which prepares the graduate for specialized practice. In medicine, osteopathic medicine, and to a lesser but growing extent, podiatry, postgraduate training is a requirement for licensure. Most students enter this training immediately upon graduation from professional school. In pharmacy, veterinary medicine, public health, optometry, and dentistry, few students specialize, often seeking their specialty training after some years of practice.

Postgraduate training takes place in hospital or clinic settings where the trainee works as a paid member of the staff working with patients, discussing patient cases with colleagues, and attending special seminars. Depending on the specialty choice, postgraduate training may take from one to seven years to complete.

Most postgraduate programs involve a formal application and admissions process. In podiatry and osteopathic medicine, not nearly enough positions are available in some specialties as are needed to train all those interested. In medicine, many positions go unfilled each year but competition for the "choice" residencies is intense. Some of the professional associations run matching programs to match students with postgraduate training positions.

Many of the barriers and issues women face in preclinical and clinical training are also barriers in postgraduate training. Lack of needed facilities, social isolation in a male setting, the biases and prejudiced attitudes of some practitioners, and a lack of certain useful institutional supports such as childcare provisions are problems repeatedly cited by female interns and residents. As in the admissions process to professional school, women typically do not have problems meeting formal requirements. However, to the extent that they lack appropriate informal requirements and are excluded from the informal network, they may bring less information and support to the postgraduate admissions and placement process and consequently are at a disadvantage.

Postgraduate training typically involves a work intensity and time commitment that surpasses the requirements of the graduate training program. Interns and residents spend periods of 24 hour on-call duty, must be available for night shifts,and typically work up to 80 hour weeks. The incompatibilities between family responsibilities and the demands of training presented in graduate schools are exacerbated by the additional rigors of postgraduate training. Thus the need for institutional supports such as childcare or flexible residencies becomes even greater.

Key Resources

The most important resources for successful application to and completion of postgraduate training are access to information, institutional supports, personal encouragements, the possession of appropriate informal requirements, and access to the informal network. Financing and meeting formal requirements do not appear to be important issues.

The first step in the postgraduate training experience is the choice of a specialty. Information about the specialties--the nature of the work, the setting, openness to and treatment of women, practice options within them, the degree of control over one's work--is vital to this decision. Specialties are to varying degrees sex-typed and some are considered more appropriate for women than others. Many of the problems confronting women concerning their choice of profession are raised again in the specialty selection process. For example, women are concerned about the length and cost of training, about control over hours so that work life need not be compromised by family demands, and so on.

The choice of a specialty (in medicine and osteopathic medicine) and the decision to seek postgraduate training at all (the other "DVOPPPs") requires a combination of information and encouragement. In medicine and osteopathic medicine, students have had exposure to all of the specialties in their clinical training rounds. For them, knowledge of the work involved is first hand. Personal preference, a measuring of personal needs versus the requirements of a specialty and the extent to which their clinical round in a specialty was a positive or negative experience all combine to affect the choice of a specialty. For example, many women in medicine reported that the hostility they faced on surgical rounds discouraged them from considering surgery as a specialty, regardless of their interest in the work itself. On the other hand, those specialties which already have a higher percentage of women and which are generally considered more "appropriate" for them seem to provide positive experiences for women during clinical rounds. The women interviewed in the study pointed out that while they are drawn toward the less heavily male sex-typed specialties such as pediatrics, for example, it is not necessarily only the presence of women in a specialty that makes it attractive to them. Other factors such as the personalities of pediatric physicians, both male and female and the caring, humanistic nature of pediatric work contribute to its attractiveness for women. Conversely, the lack of those same qualities of warmth and humanism in both the work of surgery and in surgeons themselves were often cited by women as a negative influence in making their specialty choices.

Another important issue for women in making their specialty selection is information about the degree of control they might have over their hours--and the relative degree of compatibility with family responsibilities. In the "DVOPPP" professions where the decision to be made is whether or not to pursue postgraduate training, women consider the length and cost of that training and a careful weighing of the implications for family life. Many women who had postponed having children during professional school voiced their unwillingness to postpone it any longer. Instead, they chose a practice that did not require more training and felt that "later" they might go back for specialty training. Often, however, this decision is an uninformed one. Where students have not had first hand exposure to a specialty, which is the case for most students in the DVOPPP professions, information about the implications of a specialty choice in terms of economic reward, mobility, type of practice, and nature of the work must be sought through practitioners, written material or general informal discussions with peers. Since women are less often part of the informal networks through which such information may be obtained, they have less access to it than men.

Once a student has selected a desired area of emphasis or specialty, the issue of what program or institution to pursue becomes critical. In order to make the best decision, a student must first set up his or her personal and professional priorities and then decide which programs will satisfy them. The prestige or status of an individual program is often an important consideration as is its location. And the implications of choosing one program over another are not always clear. Many residencies and internships are considered the pathway to future staff or hospital privileges in that training institution. Contacts developed during postgraduate training become vital for later referrals and support in setting up practice. The advantages of training with a particularly good practitioner may outweigh other advantages offered in another program. Most of this is only known by those in the professional informal network and thus represents information which our women respondents indicated is often less available to them.

Unless a school provides a central information service on placements around the country, information is only available by writing to each institution that has a training program in the specialty of interest. But access to the informal network is essential to find out what the informal conditions of a placement are. Students who have good access to the network are often reluctant to share their "insider" information because it may result in increased competition for choice positions. Women are likely to be excluded from this network, which often runs from fraternity brother to fraternity brother, for example, and hence they have less access to information. Additional problems which affect women in choosing and applying to postgraduate training positions involve those of mobility and flexibility. Married women may be geographically limited by their husband's careers and thus limited in the range of programs they can seriously consider. Some form of part-time and/or shared intern and residency program may also be desirable or necessary to provide a married and/or parent woman with the flexibility needed to accommodate her family responsibilities. At present only medicine provides such programs, and even in medicine such residencies are seldom available and not widely known. During postgraduate training women are also faced with a lack or shortage of other institutional supports such as childcare or domestic help as few institutions make provision for such services. The information women seek regarding program flexibility and receptivity of a given program to women is often unavailable because it is not relevant to the male information network.

For women, the tone or atmosphere of a program can be critical. Women want to know how accommodating a program and staff are to women. The choice of one program over another involves consideration of the degree of isolation or resistance a woman may meet. This type of information may only be accessible if women have access to other women who have already gone through a program. This access is possible in medicine since there are many institutions, departments, and programs offering postgraduate training. In the other professions, however, it may not be available due either to a limited number of postgraduate appointments, to low numbers of women in these professions, or both.

For the institution, the question is whether or not to accept "a woman", "this woman", or "another woman". We found that some postgraduate programs which had had unsatisfactory relationships with individual women in the past are reluctant to accept any women as a result. Hence, the fact that a woman has already gone through a program does not insure that future female applicants will be favorably received. Before a woman commits herself to a program, it is important that she have the kind of information discussed here to make an informed decision. Such information is often not available through regular sources. However, because it is often so critical to the future success of women professionals, an informal network is growing in some professions among women alumnae and those about to enter the postgraduate phase and, in medicine, through the AMVA.

The admissions procedures vary among professions depending upon the formality, general and specific requirements, and the objectivity of the selection process. Procedures also vary due to the number of available programs and spaces--medicine has thousands, optometry has few. The formal application/admissions requirements in the postgraduate system vary. Some programs require only the clinical evaluations of a student, others review the entire MODVOPPP school record. In medicine, some programs require only the dean's letter which is the medical school's official letter of recommendation often compiled or written on the basis of clinical evaluations and overall record. Other programs encourage applicants to submit as many letters as possible. Lastly, some require an interview, others do not. Within the context of their requirements, individual programs can afford to be more or less exclusive or demanding depending upon their competitiveness.

Women can and do compete favorably for graduate positions on the basis of formal requirements. This competitive position is protected somewhat if a matching system is used. Matching systems are computerized programs which match applicants to institutions based on an applicant's preference rankings of postgraduate programs and an institution's preference rankings of applicants. These systems are designed to address two problems: (1) to make the process of placing many people more manageable, and (2) to eliminate or minimize the role of favoritism and bias in placement. However the effectiveness of a matching system in achieving the second objective depends, in part, on a measure of good faith from both applicants and training programs. Matching systems are most effective in eliminating the influence of bias and favoritism when they are not circumvented by the informal network through prior arrangements ("I'll put you first if you put me first"). In this regard, our interviews indicate that much informal network activity persists in spite of the matching systems, thereby reducing their effectiveness. In addition, not all professions utilize matching systems, so in situations where no system exists and/or where it is bypassed through the informal network, informal requirements are still crucial in the postgraduate placement process.

The more applicants to a given program, the more selective it can be and the more important informal criteria become. The importance of the network varies somewhat from program to program and profession to profession. In those programs or professions that represent highly competitive situations such as in podiatry and veterinary medicine, those candidates with greatest access to the informal network have the greatest chance for success when several candidates are equally well qualified. In those programs or professions where the application/admissions process is less structured and where the criteria for selection are not as clearly delineated, the network can operate to the applicant's advantage if s/he knows how to use it. Some students begin building their contacts while in professional school by working in summer clerkships in hospitals where they want a residency. Other students visit hospitals and clinics to make themselves known and work out informal agreements before making their selections on a matching program, for example. The women we interviewed had participated in this informal process far less than their male peers, but it is unclear why.

Informal requirements do become key in the admissions process. Dean's letters often reflect biased or stereotyped attitudes about women. The willingness of faculty to support a woman's application was often found to be dependent on their beliefs about the practice patterns of women. Due to the competition for postgraduate positions, faculty tend to support male applicants who they are sure will use their training. Letters of recommendation carry differential weight depending on who writes them. The informal network is relied upon for trustworthy judgments about the personal characteristics of an applicant. As women have less access to the informal network and are less often chosen for the protegé system, it becomes more difficult for them to obtain letters from the most influential faculty.

Our interviews revealed that the normal entry into postgraduate work in the MODVOPPP professions is often preceded by a protege relationship between the student and professional school faculty. Through such a relationship the student is provided with the necessary support, encouragement and sponsorship to enable him or her to pursue a career either at the present institution or at another institution that is aware of the student's accomplishments. Such recommendations are essential elements of the postgraduate admissions process, perhaps even more so than during the original MODVOPPP admissions phase, since they represent communications between members of the same profession whose opinions are mutually respected.

To both the program and the individual, the interview (often a mandatory requirement for acceptance) is of utmost importance. Students seek information about available facilities, receptivity and personableness of program staff, and so on. The program is concerned with the student's credentials and his or her potential for fitting into the program. As in professional school admissions, the fact that an applicant is a woman presents special issues. Interviewers try to establish a woman's commitment to practicing after training, question a woman's motives in pursuing specialty training, and voice concern about her ability to fill both family and career roles. The fact that women have completed a rigorous course of training and are competitively qualified is recognized by most programs. Still, many women reported that interviewer biases and stereotyping were in evidence during their postgraduate admissions interviews.

Once an institution has selected a student for postgraduate training, certain institutional supports and encouragements are necessary to assure the most productive training experience possible. Women respondents in this study reported that they encounter many of the same barriers to these resources that they did during the preclinical/clinical phase of graduate training, and for the same reasons. Because there are proportionally fewer women in the postgraduate training setting, the institutions often provide inadequate facilities, programs, and services to meet their special needs. For example, the same problems with childcare, housing, flexible programs, and health services encountered by women in the preclinical/clinical phase are likely to be encountered again in the postgraduate phase. Since the postgraduate training experience is even more intense and demanding that the graduate training experience, reduced access to institutional supports can create even more severe problems for women students.

Similarly, postgraduate training involves even greater emphasis on learning through clinical practice and through interaction with teacher/clinicians, so the importance of equal access for women to all learning opportunities, including informal discussions and evaluations, is even more critical. Because informal learning usually occurs in informal settings such as male physicians' lounges, locker rooms, changing rooms, showers, sleeping facilities and so on, women are at a disadvantage in securing access to much of the education which occurs during the postgraduate training period. In addition, the absence of adequate and integrated facilities often conveys a message that women are still not considered valuable and legitimate members of the professions. The same message is conveyed when women must endure the same types of petty inconveniences they experienced in preclinical/clinical training such as poorly stocked bathroom facilities, ill-fitting gowns and gloves, and so on.

Women also have less access than men to needed personal encouragements during the postgraduate phase because (1) they are likely to be excluded from the informal social and other non-professional activities of their male peers as they were during preclinical/clinical training and for many of the same reasons and (2) proportionately, there are even fewer women in postgraduate programs than there are in the professional schools. In medicine, for example, where there are a little more than one hundred professional schools, there are thousands of hospitals in which postgraduate training takes place. Thus recent concentrations of women which have occurred in preclinical and clinical years are diluted in postgraduate training settings. The support which comes from the availability of other women as sources of reality testing and simply as a source of social friendships are therefore much less available to women during their postgraduate training years.

In short, it appears that women are faced with the same barriers to encouragement and institutional supports at the postgraduate level as they are at the professional school level. However, because of the intensity of postgraduate training and the increased importance of informal learning settings and teacher/student interactions, these barriers may be even more critical.

Professional Practice

> *One of my friends is a doctor who stopped practicing when she had her kids a couple of years ago. She works part-time now for the Red Cross and also does some informal consulting to her kid's nursery school, but she says she's not really planning to go back into practice--at least not right now. When I asked her why she told me several reasons but she said part of it was because she never really felt her skills were respected by other doctors and felt she was treated differently because she was a woman. She said now she feels her work is valuable and like she's doing something important with the Red Cross and nursery school and that people appreciate her contribution. (Faculty member, female, Medicine)*

Introduction

Professional practice was not a focus for this study. However, it has obvious relevance to our investigation since practice is, after all, the ultimate objective of professional education both for the MODVOPPP training institutions and for their students. As a result, our literature reviews and many of our interviews with students, faculty members and administrators touched indirectly and sometimes directly on practice issues. Many of our women student respondents in particular spoke of anxieties and concerns about problems in future practice opportunities and experiences. For women, anticipating future practice issues is important because stereotypes regarding women practioners--particularly those regarding their practice patterns and involvement in professional activities--continuously affect their experiences as MODVOPPP applicants, students, and interns/residents. In addition, for some women the cumulative impact of the barriers they encounter during their training experiences may have a profound effect on their later professional choices and activities. For these reasons, we have chosen to briefly comment on professional practice here.

Professional practice includes the choices practitioners make regarding type of practice activity (research, teaching, patient care, etc.), the form of practice (solo, group, employee), and the level of practice activity (inactive, part-time, full time). It includes the choices practitioners make regarding their level and type of involvement in professional activities including participation in local, state, national, and specialty associations, research and preparation of articles for journals, and so on. It includes the financial rewards and prestige practitioners receive for their professional work and activities, and it involves the formal and informal work, referral, consultation, and social relationships which develop among practitioners.

Key Resources

The most important resources required to establish a new professional in practice are information regarding practice/employment opportunities; access to the informal network for referral to and/or placement in a job, in practice associateships, and for patient referrals; possession of the informal requirements which are needed for access to the informal professional networks; and access to funds needed to purchase equipment and start a practice. Institutional supports such as childcare and domestic help are also important. Formal requirements such as licensure and in some instances certification must be met, but these are not typically a problem for women. Personal encouragements were not mentioned by our student respondents as an issue of concern, and as we did not interview active women practitioners, we have no direct basis for assessing the importance of this resource in professional practice. However, based on the need for personal support and encouragement in earlier stages of the professional training sequence, we would assume the need continues in professional practice and for many of the same reasons.

In most of the MODVOPPP professions, two basic practice models are available to the beginning practitioner: self-employment as a solo practitioner (and, increasingly, in a partnership or group) and employment in a private practice or institution such as a hospital, university, health department, or other agency. Our field interviews suggest that men and women consider very different issues in choosing between these models.

Available data suggests that women opt less often for the self-employment practice model than men and therefore more often choose practice settings as employees or salaried staff (see Tables B and EE in Appendix G). In all of the MODVOPPP professions for which we have data, a smaller percentage of women are self-employed practitioners than men. And, although we do not have comparable data for all of the professions, in medicine the data we do have indicates that women are more heavily represented than men in research, teaching, public health departments, and as salaried employees in hospitals. Based on our interviews with women students and women faculty members, we believe the reasons for these differences center in part on issues of compatability with family responsibilities and in part on the degree of receptivity to women offered by different practice settings.

Establishing a solo practice involves a large investment of money; a commitment to stay in one geographic locale for an extended period; building a patient clientele through the informal referral network; possibly supervising the activities of one or more employees; managing a business, including concerns with cash-flow and fee collections, rental agreements, payment of bills, and so on; and taking care of client needs. These requirements are--or may be--more difficult for women to meet. For example, many of the women we interviewed anticipated future problems in securing the financing needed to establish their own practice. They based these concerns either on their experiences in obtaining private bank loans for their professional training and/or based on the experiences of other, older practitioners in their field. If a woman is married, her husband's career may necessitate periodic moves which makes the commitment to one geographic locale a potential problem. For example, we interviewed a practicing woman dentist who had delayed establishing her own practice for years because her husband's career as a corporate executive had necessitated frequent geographic relocations. Many women students in both dentistry and optometry indicated that the need for a substantial amount of costly equipment in their professions represented a limitation in considering solo practice because it also represented a constraint on any personal mobility they might require in a marriage situation.

To the extent that women have less access to the informal network, it is reasonable to assume that they may also have difficulty in establishing a sufficient patient clientele to sustain a solo practice. A recent study of dental practitioners' referral patterns in a single community bears this out. Finally, women are not normally socialized to think of themselves as businesspeople or entrepreneurs--much as they typically are not socialized to think in terms of having professional careers--and they are not exposed to the kinds of informal conversations among their male peers in the professional schools which would aid them in contemplating and preparing them for the business/management responsibilities entailed in running a solo practice. Several women students cited these responsibilities as a prime concern in considering solo practice, primarily because they felt they had never had the kind of preparation for business management that most of their male peers had.

Thus it appears that these barriers to women in the solo practice setting may in part account for the greater attractiveness to women of various forms of institutional employment. These settings offer greater flexibility and are more adaptable to the needs of women practitioners, particularly in reconciling their desires to fulfill both professional and family responsiblities. In addition, the presence of other women in these settings may in some instances serve to make them more supportive and accepting environments for the beginning woman practitioner. However, women still anticipate and encounter barriers in institutional or employment situations as well.

The primary difficulties concern placement in attractive employee positions, due in part to the reduced access women have to the informal networks through which much placement information is available and through which much placement actually occurs. For example, in dentistry, pharmacy, and optometry, male professional fraternities are a particularly crucial component of the informal network in obtaining placements, and many students--men and women both--told us that membership in a particular fraternity was often the single critical factor in obtaining certain jobs and being referred for certain associateships. Of the schools we visited in this study, only one had any formal placement and referral program for its students, so it is probably reasonable to assume that both male and female MODVOPPP professional school graduates are heavily dependent on the informal referral network for their initial placements. Therefore, women's lack of access to the informal networks is a particularly important issue. Additionally, the stereotypes which follow women through each step of the professional training sequence continue to serve as barriers at the professional practice level. Many of our respondents indicated that practitioners are often reluctant to hire women in spite of their formal qualifications on the grounds that women will leave practice to marry and/or have children;

that patients and clients would object to and/or have less trust in a woman practitioner; and that a woman may not meet certain informal requirements for practice--for example, that a woman would be a liability in a retail pharmacy because the store would be more vulnerable to robberies and theft. And, in some cases, administrators and students told us practitioners would not hire women simply because they did not believe women should be in their profession.

These stereotypes and beliefs about women indicate that women are not considered by many members of the MODVOPPP professions to possess those personal characteristics and other informal requirements and credentials desired in employees and associates. In particular, proving their professional dedication and commitment is often an especially difficult problem for women. Women are frequently criticized for practicing less than men or not at all, and this argument that women are too often inactive or part-time practitioners leads in turn to the belief that women are not committed and dedicated to their professions. This belief is one of the primary stereotypes which operates as a consistent barrier to women in gaining access to other resources at all stages of the professional training sequence. As it is frequently cited as the major reason women are resented by some male practitioners, it also operates as a barrier to women in achieving desirable employment opportunities.

Women's practice activity patterns do show some differences from men's, although data to document the degree of difference and reasons for any differences are difficult to obtain. However, available data in medicine (see Tables FF and HH in Appendix G) suggest that in this profession women are somewhat less active than men--in 1973, for example, approximately 96% of all male physicians were active as compared to 89% of all women--and that they are also more likely to be part-time practitioners. Available data on patient care activity, for example, shows women devote approximately 37 hours per week to patient care compared to 46 for men. This difference may in part reflect women's proportionately greater representation in institutional forms of employment where hours are typically regulated to some extent and might reasonably be expected to be fewer than in private practice, although we do not have data on levels of practice activity available by type of employment to assess the extent to which this might be the case.

However, based on our conversations with women faculty members and students, it seems reasonable to assume that much of the difference in practice and professional activity patterns between men and women professionals is a reflection of two factors: the sex-bias they encounter among many male practitioners and the absence of institutional supports which make full professional practice possible and compatible with other traditional role responsibilities such as wives and mothers. These two factors are often mutually reinforcing. The absence of reliable, high quality, and reasonably priced childcare and domestic services in our society in general, and, in many of the institutions where women MODVOPPP professionals work in particular, make full-time practice and active professional involvement more difficult for women than for men. To the extent that women do practice less, they are regarded as less committed and this becomes the basis for at least some of the prejudices women encounter among male practitioners. Those prejudices may serve in part to dissuade some women from seeking more active involvement in work and professional activities, but they also become a prime reason that women have fewer opportunities available to them to be fully involved in work and professional activities in the first instance. Table JJ in Appendix G is instructive in this regard. It shows that women in medicine are slightly less active in professional association activities than men, and, as we have noted earlier, that marital status makes a significant difference in level of involvement for women--that is, married women are less involved than single women. It also shows, however, that women are considerably less often officers of various associations than men--data confirmed by our own brief survey of women in professional associations (see Appendix E)--which suggests that they are less often sought, nominated for, and elected to office. In short, the choices women make and the opportunities they have in their professional lives continue to reflect the resources they lack. In turn, lack of access to key resources reflects societal stereotypes about women which are incompatible with those of a MODVOPPP practitioner--and they reflect the basic incompatabilities between certain kinds of professional demands and the demands made on women by family life in our society.

Some of our study data and our interviews with both men and women students and other respondents suggests that some current trends may be instrumental in resolving some of these difficulties if the trends continue and if they are significant. Practice activity data in medicine (Table FF in Appendix G) indicates that the proportion of inactive physicians who are women decreased between 1963 and 1973 with a proportionate increase in inactive male physicians. If male and female practice patterns become more similar, some of the basis for the stereotyping which denies women access to necessary informal requirements for full professional legitimacy may be weakened.

Our interviews with women students also suggest that they are determined to put their education and training to work and to have full and rewarding careers in their professions. While most express a desire to assume both familial and professional roles, changing life styles for many has meant that their attitudes about marriage and family obligations are supportive of combining both successfully. For example, many married women share household and childrearing tasks with their spouses, and in some cases the women and their families have relocated to their professional school and/or postgraduate training locations precisely in order to train for or further their careers. Additionally, it is our very strong impression from our interviews with male students that many of today's MODVOPPP men are increasingly critical of practice modes which require levels of time and energy commitments which preclude a full family and personal life. Many of the men we interviewed had chosen non-medical professions because they wished to limit and control the amount of time and energy they would have to commit to their profession. Many men in medicine expressed a great deal of interest in various forms of group and institutional practice as a means of providing flexibility in their careers and the opportunity to keep their personal and professional lives in balance.

These changing attitudes among some of the younger generation of MODVOPPP male practitioners may be particularly important as the basis for changing current definitions of professional commitment and dedication, and for lending greater legitimacy and prestige to non-solo practice modes and practitioners. Both changes should, in turn, serve as a boost to the overall status of women in the health professions. HEW's interest in alternative, institutional forms of health care delivery such as HMOs and pre-paid group health plans may similarly have a positive effect in this regard.

CONCLUSIONS: OBJECTIVES, CRITERIA FOR MODELS, POLICIES, PROGRAMS AND SERVICES DESIGNED TO PROMOTE WOMEN'S SUCCESS AS MODVOPPP APPLICANTS, STUDENTS, AND PRACTITIONERS

Women face many barriers to successful and equal access to MODVOPPP applicant pools, educational training and professional socialization, and ultimately full participation in the professions. Some of these barriers represent features of women's traditional roles in our society and certain consequences of those roles; some represent institutional and environmental features of the MODVOPPP professions and schools; some represent direct conflicts and incompatibilities between women and their traditional roles on the one hand and the operations and requirements of the professions and schools on the other; and finally, some represent the interaction of all of these factors in ways which deny women equal access to the resources all individuals need to succeed as applicants, students, and practitioners in the MODVOPPP health professions.

Thus, efforts to eliminate these barriers or to minimize their impact on women's access to the MODVOPPP professions must be designed to accomplish at least the following interrelated objectives: (1) to alter those features of women's traditional socialization which results in limited career aspirations and by extension the limited proportion of women in MODVOPPP applicant pools; (2) to minimize the structural conflicts and incompatibilities between women's traditional family roles and obligations as wife/mother and the role requirements and responsibilities of MODVOPPP student and practitioner; similarly (3) to provide institutional mechanisms which support the notion that women's career aspirations are valid and valuable as are men's; (4) to discredit and interfere with those societal stereotypes about women which are out-dated and/or incorrectly applied to MODVOPPP students and women and with those about the professions and their training and practice requirements and opportunities which are incorrect and/or in conflict with stereotypes about women; (5) to minimize and/or provide alternatives to the professions' informal, collegial networks as the basis on which so much of the professions' information, opportunities, and economic organization are based; (6) to contain and neutralize the influence and impact that sex-biases and prejudices of older and/or practicing clinicians in the MODVOPPP professions have on the schools and their operations;

and perhaps ultimately most important (7) to eliminate the heavy male-sex-typed imagery which the MODVOPPP professions still convey in spite of recent and in some instances dramatic increases in women's enrollments in the MODVOPPP schools.

These objectives suggest several criteria and performance standards which the success models for recruitment and education discussed in the next chapter should meet. These are also the criteria and performance standards which federal, state, MODVOPPP professional and educational association, and individual school policies, programs,and services should meet in order to be most effective as interventions designed to increase women's access to successful professional training. They include the following.

1) Flexible. Policies, programs, and services must be flexible primarily to ease and negotiate the incompatibilities which currently exist between women's traditional role obligations and those of MODVOPPP student and practitioner. For example, school policies and curricula structures which permit either a shortened or extended training period including part-time attendance provide maximum flexibility for women and other students as well to select the option best suited to their particular life circumstances and needs. Federal policies which influence what schools may do in this regard must of necessity be flexible also.

2) Redundant. Programs, services, information, and so on must be redundant--that is, several programs or services designed to meet the same needs or accomplish the same purposes are preferable to only one or a few. Redundant sources of information, for example, are useful means for bringing to women's attention information they might not otherwise receive since their access to both formal and informal information sources is typically restricted. Redundant school programs and structures designed to provide needed supports and opportunities for women to cope with unpleasant experiences in the schools are important for two reasons. First, multiple supports are a key way of indicating that women have varying needs and interests and are not a homogenous group. This helps to undermine and

erode simple stereotypes about them. Second, multiple supports are a pragmatic way of meeting the varying needs and interests women have. For example, a personal counsellor may be an important and essential service for women who need the opportunity to work through unpleasant experiences in their schools so they can move beyond them and get about the business of maximizing their professional training opportunities. For other women, an ombudswoman and/or an official committee on the status of women may be needed as mechanisms for hearing and bringing women's legitimate grievances about faculty behavior and attitudes to the attention of appropriate school administrators. The addition of women's support groups, formal or informal, may serve yet other needs which personal counsellors and official school grievance or information channels are not designed to meet.

3) Gender Non-Specific. Programs and services designed to respond to women's needs should not be singled out and labeled as such. Identifying certain policies and services as instituted primarily for women only reinforces certain stereotypes and tracking patterns in the professions and makes women more visible and subject to charges that they must receive special accommodations in order to be accepted into and/or survive in the MODVOPPP schools. It also creates and increases the chances for negative backlash in faculty and male student attitudes and behaviors. Thus brochures, catalogues, and other forms of recruiting materials aimed at interesting more women in the professions should show and discuss them as a normal and natural part of the professional experience without relying on stereotypes and simplifications as justification--for example, that women are ideally suited for dentistry because they have small gentle hands and work well with children. Programs such as flexible curricula and/or escort services in high crime-rate inner city neighborhoods should be described as available to all students because they are needed and/or desirable in themselves.

4) Official and Authoritative. Official policies in written and verbal form from key administrators and decision-makers in the professional and educational associations and schools are important mechanisms for legitimating the presence of women in the professions and discouraging an

environment where male faculty members and students feel free to express sex-biased attitudes and behaviors toward women students. College presidents, school deans, department chairs, and other official figures in an institution carry a great deal of authority if only by virtue of their position; and in many cases because they are elected or appointed by their peers, they have much personal authority and influence as well. When these individuals speak out firmly and openly against various forms of sex-bias in their professions and institutions, they can and do create a set of expectations that help prohibit open forms of discriminatory behavior on the one hand and legitimate the presence of women on the other.

5) Symbolic. People and institutions all convey subtle messages and meaning in their actions--messages which may often be more important for their symbolic value than their content. Institutional sensitivity to this fundamental fact of human life can contribute in important ways to making women students and practitioners welcome and legitimate members of the MODVOPPP professions. Many women in the schools we visited spoke, for example, of professors who continue to address their classes as "gentlemen" in spite of the presence of increasing numbers of women--or of clinicians who address male students as Dr. and female students as Miss or by their first names. These issues of language seem inconsequential to some women, and they are important to others. However, the issue of language is one of those issues of meaning and message which symbolizes to some extent a speaker's view of the world. When the speaker is an official representative of a MODVOPPP school or profession, s/he can do much at a symbolic level to convey the message that women are appropriate and legitimate participants in the professions through sensitive language use.

6) Public. Information about school and professional policies, programs and requirements which describe and influence training and practice opportunities should be formally and widely publicized. Because women have less access to informal professional networks, formal systems of information dissemination are all the more important for them. In addition, women may sometimes be reticent to seek information they believe would reinforce limiting stereotypes about them--for example, information

regarding the availability of part-time internships and residencies or information about procedures for taking a year off from school for personal or other professional reasons, and so on.

7) Innovative. Innovative programs and services at particular schools are frequently an attraction to women because their very presence suggests an open administration which is willing to experiment and is tolerant of differences. The more innovative federal, state, association, and school policies and programs are, the more likely they will suggest the same openness to new and non-traditional members of the professions such as women and minorities.

IV. SUCCESS MODELS: DEVELOPMENT, PRESENTATION, AND TEST STRATEGIES

The Introduction to this report notes that the central purpose of the Exploratory Study of Women in the Health Professions Schools has been the development of conceptual models of recruitment, admissions, and education systems which would maximize equal opportunities for women and encourage their success as school applicants and students in the MODVOPPP health professions. In the methods chapter we defined success--or the objective of the models--as equal opportunity for equal access to MODVOPPP applicant pools, schools, and ultimately professional practice. In the last chapter, we described features of women's traditionally defined social roles, of the MODVOPPP professions, and of the schools which act as barriers to equal access for women and, in combination, deny women the resources they need for success. We also suggested a number of objectives which the success models and other programmatic and/or policy interventions aimed at eliminating the barriers should attempt to achieve and the performance standards or criteria by which such interventions might be assessed.

This chapter presents the models we have developed to encourage success for women as applicants to and students in the MODVOPPP health professions. It discusses and documents the approach we used to develop models, and it also includes consideration of several alternative strategies for testing the models--strategies which can be used either singly or in combination with one another.

CONSIDERATIONS INFLUENCING MODEL DEVELOPMENT

Before we turn to a discussion of the approach we used for model development, we wish to note several key considerations on which that approach was based and which the models reflect. First, the models are based on an analysis of the 27 schools we visited during this study and of the eight MODVOPPP professions. In conducting the analysis, we took as our starting premise that, for purposes of model development, we were principally interested in identifying those institutional features of recruitment and education systems associated with success as we had defined and chosen to measure it. By institutional features we mean schools', associations', and/or public (state, federal) policies, programs, services, and organizational structures. We also include a school's environment or "atmosphere" created by these features and by the attitudes and behaviors of administrators, faculty members, and male students at the institution. As noted earlier in this report, we disregarded features which are relatively fixed and therefore provide no significant opportunities for change or leverage--for example, whether the school is affiliated with a university or is free-standing, its size, whether it is publicly or privately funded and sponsored, whether it is regarded within its profession as high or low status, and so on. In one instance, however, the relationship between a relatively fixed feature and one or more of our success indicators was too strong to ignore. Women at relatively new schools tended to report problems more often resembling men's than was the case at older institutions. Therefore we attempted to discover what factors in new schools create supportive environments for women and what programs, policies, services, and so on might be changed and/or influenced in other schools in order to achieve the same supportive environment.

Second, we suggested in the last chapter in our discussion of the social forces which track women away from professional interests and careers that an overwhelming and powerful confluence of special circumstances typically seems required in an individual woman's life history if she is to overcome these forces and become a MODVOPPP or other professional career aspirant. Similarly, we suggest that at all stages of the professional training sequence an overwhelming number of special circumstances are required to simply offset or balance-out the features of the professions and the schools which work to limit women's access to and participation in the schools and professions. Thus it seems to us that the most useful models for women's success as applicants to and students in the MODVOPPP schools must be incremental, modular, and redundant. By that we mean they should be based on and include multiple components which are more effective and powerful when used in combination with one another rather than singly. The more redundant the model's components are, the more effective the models are likely to be.

Third, the models we have developed and present later in this chapter represent a combination of several factors. They include school, association, and in some instances federal and/or state policies, programs, and other institutional features which were present in the schools we visited in the study and which seemed most often to differentiate those schools which provided maximum opportunities for success for women from those which did not. Based on our analyses of women's reports of their problems and of barriers to women's success as applicants and students, the models also include suggested policies, programs, facilities, and other institutional characteristics we did not locate in the study's schools or professions but which we believe are necessary and desirable components for effective success models. Finally, since the number and combinations of useful components for success models are virtually unlimited, the criteria and performance standards outlined in the last chapter should be understood to be part of the models. The criteria and performance standards are useful mechanisms for effectively expanding and varying the models.

Fourth, for several reasons, we have generally been reluctant to identify any single component or cluster of components as key, critical, or more important than any other(s) in creating optimal conditions for success for women as applicants and students. Social systems and institutions as complex as professions and schools are typically synergistic--that is, the relationships among their component parts are as important as the parts themselves. Any attempt to alter or remove one or more components on the grounds that it is less important than some others may alter the entire system or institution in significant ways. Additionally, the models and their components are based on an analysis of a limited number of institutions and have yet to be subjected to a broader test for applicability and effectiveness.

Fifth, the models presented in this chapter include components or features of institutions which are associated with success for women as applicants and students as we have defined success. In noting these associations we are not postulating simple cause and effect relationships. In most cases the relationships among components are too complex to involve simple causal relationships. For example, among the schools we visited we found that innovative curriculum content and structure was most often present in those schools which also offered supportive environments for their women students. While we can observe that relationship, we do not necessarily infer that innovative forms of curricula are responsible for a supportive environment since the more important factor may be an open, innovative group of administrators and faculty members who are responsible for both the innovative curriculum and an environment which legitimates and supports the presence of women.

Finally, we have developed separate models for recruitment, for admissions, and for education since each of these stages of the professional training sequence is, to some extent, discrete; involves different issues, problems, groups, and institutions; and is a critical part of an entire training process whose ultimate objective is the education and socialization of successful practicing professionals. Where relevant, we have also noted components in the educational training model which have broader applicability to postgraduate training as well.

DEVELOPMENT OF THE MODELS

Development of the recruitment, admissions, and educational training models was based on preparation and analysis of extensive site visit reports for each of the 27 MODVOPPP schools we visited in the study. The interested reader can refer to Appendix B, Exhibit I to review the details of instructions for preparation of these reports and an outline of their contents. In general, the reports covered a description and analysis of: the institution's history; its organizational structure; key issues and decision-makers involved in each stage of the professional training sequence; school policies, programs, services, and facilities; the school's formal and informal relationships with its profession--the educational and professional associations as well as informal networks of practitioners--and with affiliated and cooperating training institutions and practitioners where relevant; the views of administrators, faculty members, and male and female students towards each other; male and female students' reports of their experiences in considering, applying for, being admitted to, and going through training in the profession and the school; and as much statistical data as available describing the demographic composition and performance of the faculty, applicant pool, and student body. Utilizing these reports, we developed the models in the following manner.

First, we developed a preliminary typology for classifying the 27 MODVOPPP schools we visited as best, good, or poor in encouraging success for women applicants and students. The basis for these categories was the degree to which the schools provided a supportive environment or atmosphere for women students. We used several indicators to operationalize the concept of a supportive environment. Some of these, as noted in the methods chapter are also the descriptive indicators useful for assessing women's success as applicants and students in the MODVOPPP schools. These indicators included the following.

- Women students we interviewed usually referred to their school and profession as "we" rather than "they".
- Women students typically volunteered pleasure and satisfaction with their choice of school and profession and a loyalty to both.
- Women students exhibited a sense of excitement and exhilaration about training and professional experiences.
- Women students related relatively few incidents of sex biased behaviors or attitudes on the part of male faculty and/or students.
- Women students more often described problems they faced as students rather than as women--for example, they more often described problems with the rigors of the curriculum as did their male colleagues than with incidents of discriminatory behavior.
- The problems women reported they experienced as women usually involved groups or incidents outside the school, not within or as a part of it.

Additional and more general indicators included:

- a general mutual warmth and respect among the administration, faculty, and student body;
- positive descriptions of women as students and future practitioners by the administration, by faculty members, and by male students;
- a general expression of respect and cooperation between male and female students; and

- an apparent lack of extreme competition among students (usually indicated by fewer reports of cheating, more frequent reports of cooperative lab and study groups).

Using these indicators, we assigned the 27 schools to the three categories--best, good, and poor--and we classified six of our 27 schools as best, 13 as good, and eight as poor.

We chose descriptive indicators rather than women's enrollments to create our initial typology and categorize the schools because we also wanted to test the hypothesis that, in general, the greater the proportion of women in a school, the greater the likelihood that the institutional environment afforded women students would be a supportive one. Classifying the schools on the basis of women's reports of their experiences and on other related indicators and then verifying the typology against available statistical data permitted us to make that test.

Therefore, our second step was to match the three-part classification of schools against available enrollment data to determine whether an association existed between the proportion of women students in a school or class and the overall receptivity to and supportiveness of women at that institution. At the same time, this permitted us to determine whether the two sets of indicators we had selected for measuring success worked together. We chose as our sole statistical indicator for this purpose the percentage of women enrolled in each institution's first year class. We chose first year rather than total enrollment because it is a more sensitive indicator of an institution's current as opposed to its past posture toward women applicants and students. As we had hoped and expected, first year enrollments varied in the predicted direction with the six best schools averaging 31% women, the 13 good schools averaging 26%, and the eight poor schools averaging 17%.

Our next step was to identify the programs, policies, services, organizational structures, facilities, and other features of the best schools which we considered might be important contributions to the favirable admissions rates and experiences of women at those institutions. (In a few cases, we added policies or programs we felt were important but did not find among the schools in the best group.) We included only those programs and policies formally sponsored and/or supported by an institution and its resources. So, for example, even though we encountered numerous instances where women students, singly and/or in groups, voluntarily made special recruiting visits to nearby junior high and high schools and colleges to interest young women in their professions, we did not include those efforts as examples of formal, school-sponsored recruiting programs. We clustered these institutionally-sponsored policies, programs, and other components into three groups or systems: recruitment, admissions, and the educational training system. Then we analyzed each of the 27 schools to: (1) determine which components, if any, in each of the three systems were present in each school; and (2) to determine whether there was any relationship between either the number of or the particular components found in the best, the good, and the poor groups of schools.

This comparison revealed several interesting results. First, it provided some substantiation to our hypothesis that the greater the number of components an institution has, the more responsive to and supportive of women the institution is likely to be. Of a total of 50 components we identified as present in at least one of the best schools, the six institutions in the best group averaged a total of 23 of those components compared to 15 for the schools in the good group, compared to only five for the schools in the poor group. Table 5 below summarizes this relationship as well as the relationship between average first year female enrollments and the best, good, poor typology.

TABLE 5

TYPOLOGY OF MODVOPPP SCHOOLS: BASIS FOR SUCCESS MODELS

	Best	Good	Poor	Total
Total Schools	6	13	8	27
Average % Women 1974-75 First Year Enrollment	31	26	17	--
Range in % Women 1974-75 First Year Enrollment	14-56	8-44	9-33	--
Average Number of Positive Institutional Components (Total Possible = 50)	23	15	5	--
Range of Positive Institutional Components	14-30	8-21	1-14	--

Second, a detailed look at the results of this comparison on Table 6 below shows a very sharp distinction between the best and good schools on the one hand and the poor schools on the other. In general, the institutions in the best and the good school groups usually include at least one of the components in each system, and typically each of the components is found in several schools. By contrast, many of the components in each system are not included in any of the schools in the poor group. For example, none of the poor schools sponsored any special recruiting missions to attract women nor did school catalogues or brochures in any way serve to attract women by picturing or describing them as welcome and/or evident members of the profession or of the school's student body. In all, the poor schools as a group displayed significant parity with the good and best schools on only four of the 50 components. These items merit some analysis.

Component (2) in the Admissions System--Procedures and policies designed to multiply points of view...--was found in two-thirds of the institutions we visited Given the increasing competition and ever-improving qualifications of applicants for admissions to MODVOPPP schools, most institutions do use multiple criteria and procedures for admissions so a lack of significant differentiation on this component is not surprising. Similarly, Admissions Component (6), Flexible admissions policies..., can work to any applicant's disadvantage if the flexibility is designed to maximize opportunities for influential alumni and other professional sponsors to successfully support certain candidates for admissions. This is often the manner in which flexible admissions policies did work in the eight schools included in the poor group. Since women rarely received individual sponsor support in their candidacy for admissions, flexible admissions policies allowing the informal network to have more influence in admissions did not work to women's advantage in these schools.

Although relatively few schools had affirmative action officers with women students as a clear focus of concern, and relatively few had women's groups or organizations receiving...support...from the schools (Educational System Organizational Supports, Components 2 and 4), schools in the poor group were as likely or more likely to have one or both of these components than the

TABLE 6
RECRUITMENT, ADMISSIONS, AND EDUCATIONAL SYSTEM COMPONENTS SUPPORTIVE OF WOMEN

	Best Schools N=6	Good Schools N=13	Poor Schools N=8	TOTAL N=27
RECRUITMENT SYSTEM COMPONENTS				
1) Special recruiters/recruiting missions to attract women.	2	2		4
2) (Special) films, brochures, catalogues which focus on women or include them heavily in content and photo.	3	2		5
3) Other: Includes only school sponsored programs and activities. Does not include individually motivated efforts by specific women faculty or students.	2	2		4
ADMISSIONS SYSTEM COMPONENTS				
1) Flexible admissions committee membership structure--i.e., composition includes a range of ages (thus includes students), ethnic groups, sex and disciplines. Tenure is limited to a specific term so there is a constant replacement of members.	5	4	1	10
2) Procedures and policies designed to multiply points of view, perspectives and criteria in applicant screening--e.g., multiple readers of files; multiple interviewers including one of own sex; use of many balanced and off-setting criteria (GPA, Aptitude Test Scores, Letters of Recommendation, etc.)	5	9	4	18
3) Procedures and policies for weighting admissions criteria and ranking in women's favor--e.g., through extra points for sex (or minority status), through emphasis on maturity and breadth of experience, through emphasis on people with community/humanitarian orientation to provision of health care, etc.	1	3		4
4) Procedures and policies designed to make explicit, and to some extent standardize, the issues and criteria around which interviews and file reviews should focus, applicants should be considered--e.g., written interview, file review guides and formats; admissions committee discussions and planning meetings focused on surfacing these, etc.	2	3	1	6
5) Programs and techniques designed to sensitize interviewers, other admissions participants and decision-makers to review and interview process, styles, impact on the interviewee--e.g., formal training sessions including role-playing, video-feedback, lecture, etc; handbooks and other written instructional materials; group discussions, etc.	2	2		4
6) Flexible admissions policies can consider unusual applicants, make exceptions.	6	11	4	21

TABLE 6
. . . SYSTEMS COMPONENTS SUPPORTIVE OF WOMEN (CONTINUED)

EDUCATIONAL SYSTEM COMPONENTS	Best Schools N=6	Good Schools N=13	Poor Schools N=8	TOTAL N=27
A. Innovative Curriculum Structure				
1) Grading System: Pass/Fail	3	6	1	10
2) Flexible curriculum sequence: Early integration of the clinical with preclinical experience and courses.	5	5	2	12
3) Flexible completion/level of effort: Training can be shortened or extended to accomodate intensive or part-time study (including internships and residencies) such as half-day programs, summer programs, early start programs, joint clerkships.	4	5	1	10
4) Curriculum emphasizes broad training and exposure through mechanisms such as a variety of training sites, interdisciplinary approach to training.	5	7	1	13
5) Academic assistance is available, and the student may make up work without losing too much (if any) time through make-up tutorials or retaking a course without having to drop out for a year.	3	9		12
B. Innovative Curriculum Content				
1) The school(s) requires or offers courses in professional history and ethics; setting up a professional office/practice; the health care delivery system--federal trends, etc.; any courses in appropriate social sciences such as family psychology, death and dying, etc.	4	7	1	12
2) There is much room in curriculum available for non-profession electives.	4	2		6
3) Generally, school seems to encourage non-professional course electives (social science courses, for example).	3	2		5
4) Curriculum emphasizes broad training and exposure to as many professional and non-professional experiences as possible including emphasis on varied course work.	4	7		11
C. Organizational Supports -- Only official school-sponsored, endorsed, encouraged or permitted structures such as:				
1) An official committee on the status of women.	1	2		3
2) An affirmative action office/officer with women as a clear focus along with minorities, students as a concern as well as employees.	3	3	3	9
3) An ombudsperson--either one officially designated as such or one who is permitted by the institution to function openly in that capacity--whose focus includes (or is limited) to women.	1	2		3

TABLE 6
. . . SYSTEMS COMPONENTS SUPPORTIVE OF WOMEN (CONTINUED)

	Best Schools N=6	Good Schools N=13	Poor Schools N=8	TOTAL N=27
Education System Components--Continued				
4) Women's groups or organizations which have official or unofficial support and/or assistance from the school.	1		2	3
5) Active counseling service; strong effort to keep failing students.	3	5	1	9
6) A formal orientation program for new students with an older student or faculty member assigned to each first year student.	2	3		5
D. Facilities, Equipment, Services -- Provided either through school or university where relevant				
1) Escort or security services if needed.		1	1	2
2) Changing/locker rooms, sleeping rooms, etc. (where appropriate to profession--15 schools)	3	3	2	8
3) Gowns, gloves, etc. designed for women (where appropriate to profession--25 schools)	3	3	2	8
4) Special equipment (such as carts for hauling heavy equipment, etc.)		1		1
5) Childcare facilities.		2		2
6) Health services routinely include family planning counselling and services, other gynecological services, in acceptable manner.	1	3		4
7) If appropriate, housing or assistance in locating housing is provided.	2	2		4
E. Placement and Related Services				
1) Special assistance and programs in locating, obtaining curriculum-required work experience --preceptorships, externships, etc.	2	5		7
2) Policies, procedures and practices designed to control, influence or monitor training experiences in cooperating institutions such as hospitals, clinics, other clerkship, externship, residency training organizations/locations.	2	2		4
3) Special assistance and programs in locating, obtaining jobs, practice opportunities, etc. after completion of training (not applicable for professions with central matching services).	1			1
4) Student option to select rotation group (so women can select to be with other women).	2			
F. Responsive, Flexible Decision-Making Structures -- (Where an issue or mentioned at institution)				
1) Balance of power between administration and faculty neither stalemates nor leads to a situation where one more than another consistently dominates.	1	3		4

TABLE 6
. . . SYSTEMS COMPONENTS SUPPORTIVE OF WOMEN (CONTINUED)

	Best Schools N=6	Good Schools N=13	Poor Schools N=8	TOTAL N=27
Educational System Components--Continued				
2) Strength of decision-making within the institution is sufficient to withstand outside influences such as alumni, state legislature and other interest groups.	1	1	1	3
3) Key, powerful administrator permits access to self by other individuals, groups within the institution.	2	4	1	7
4) Multiple groups and constituencies within the institution are included in the decision-making structures and process.	3	5	1	9
5) Formal policies outlining flexibility in program.	4	5		9
G. Legitimating Special Events, Persons, Features -- This would include unique and singular historical events or personalities or groups which are significant in "legitimating" the presence of women at the institution but are not necessarily reproducible elsewhere. Such things might be:				
1) Personality and public pronouncements of the dean or other key leadership and administrative figures communicates desire for and legitimacy of women in the school, profession.	4	6	1	11
2) A strong move by faculty, by students, by women in the institution, to make special efforts to open the institution to women (and/or minorities).	2	3		5
3) An effective affirmative action officer, plan or program which is highly visible, supported by the school and effective in terms of output--e.g. hiring of increased numbers of women in key positions.	2	2		4
4) However it might have come about, a large number of women faculty members and administrators to serve as role models for women students.	3	4		7
5) Women are not overly visible or unusual -- includes, presence of substantial numbers of women faculty, many women in student body and/or school is part of a larger university with many women.	3	4	1	8
H. School's Role as Leader or Innovator in Profession				
1) School prepares new faculty or researchers for the profession.	2	6		8
2) School is committed to supporting new trends in the profession such as committment to general practice, community focus, humanistic emphasis or emphasis on rural practice.	5	7	1	13
3) School is testing new, innovative curriculum structure and/or content.	6	9	1	16

TABLE 6
. . . SYSTEMS COMPONENTS SUPPORTIVE OF WOMEN (CONTINUED)

	Best Schools N=6	Good Schools N=13	Poor Schools N=8	TOTAL N=27
Educational System Components--continued				
I. School has Positive View of its Students as Able, Mature Individuals				
1) Students effectively participate in important committees.	6	5	1	12
2) Overall atmosphere is respectful of students--e.g. faculty attitudes, school policies are open and non-intrusive (no "parental" rules).	6	8	2	16

good or best schools. The reasons for this are inconclusive. It may be that the poor schools need affirmative action officers and women's groups more; that male backlash to the presence of Affirmative Action programs and/or women's groups has created a more difficult environment for women than would otherwise have been the case; or that these simply are not among the most important features of schools which provide a supportive environment for women.

Finally, a careful look at the good and best school groups reveals six major points of difference between them--that is, schools in the best group are more likely to include certain components in their admissions and educational training systems than are schools in the good group. The six are: first, diversified composition of admissions committees (Admissions, Component [1]); second, flexible curriculum structures (Curriculum Structure Components 2, 3, and 4) including the school's willingness to test new, innovative structures and/or content and a commitment to new trends in the profession (Educational System, School's Role as a Leader..., Components 2 and 3); third, the personality and public pronouncements of the dean or other key leadership figures supporting and legitimating women's presence in the school (Education System, Legitimating Special Events..., Component 1); fourth, sufficient numbers of women students and faculty to substantiate their integral roles in the institution and, in the case of faculty and administrative women, to serve as potential role models for the women students (Educational System, Legitimating Special Events, Components 4 and 5); fifth, involvement of multiple constituencies, including students, in decision-making structures and processes (Educational System, Responsive, Flexible Decision-Making Structures, Component 4, and School has Positive View of its Students...Component 1); and sixth, and perhaps as a result of many of these other differences, an overall atmosphere at the school which is respectful of students as mature, capable individuals (Educational System, School has Positive View...Component 1).

The final step in model development was to take the components of the recruitment, admissions, and educational systems associated with the good and best schools and use them as the basis for model recruitment, admissions, and educational systems with priority components in each system being those which serve to differentiate the good from the best schools. Since the models are both modular and incremental, we have included even those components which seem inconclusive or perhaps unimportant since only future and more systematic tests will further determine what particular configurations of components are most effective in assuring success of women as MODVOPPP school applicants and students.

Finally, we recognize that the resource, political, and organizational needs and limitations of individual institutions will, in some cases, necessitate variations and modifications of the three models described here. However, we suggest that these variations and modifications should strive to incorporate the criteria and performance standards applied to our models in order to assure maximum effectiveness--that is, model components should be: 1) flexible, 2) redundant, 3) gender non-specific, 4) official and authoritative, 5) symbolic, 6) public, and/or 7) innovative.

SUCCESS MODELS

Recruitment Model

The proportion of women in the MODVOPPP health professions' applicant pools has increased substantially in the last several years without much conscious or significant recruiting sponsored by the MODVOPPP professional and educational associations and/or schools. However, given the social forces which continue to track women away from professions and careers, an aggressive and comprehensive recruiting system would be required in order to successfully increase the proportions and change the characteristics of women who apply to MODVOPPP schools so that on both indicators women would more nearly resemble men. Such an effort would necessarily involve more than the MODVOPPP professions, their associations, schools, and practitioners. Its success would ultimately depend on the actions of many individuals and institutions which are beyond the reach and direct influence of the professions and of federal policies and programs--for example, the behaviors of families; the contents of elementary, secondary, and preprofessional schools' textbooks and curricula; media messages in advertising and programming; and so on. Nonetheless MODVOPPP schools and associations supported by appropriate federal programs and policies could do a great deal to help assure that women receive accurate information about the MODVOPPP professions--information presented in a manner which would encourage more women to consider the professions as career options and to apply for admissions to the schools. A carefully designed recruiting effort could minimize the important roles now played by the informal network and, to a lesser extent, personal encouragements, in influencing an individual's access to MODVOPPP applicant pools. The content of the recruiting message, the media used, the sponsor(s) involved in the effort, and the audience(s) for the effort are all key considerations in a model recruiting system's potential effectiveness.

Content of the Recruiting Message

The information presented in a model recruiting system should portray and describe the profession and its current practice opportunities accurately and in detail. It should present the range of work opportunities available to a practitioner including various specialties where appropriate; alternatives to solo practice including various forms of group and institutional opportunities; opportunities for part-time and/or flexible practice commitments; notable trends in practice patterns and opportunities; and wherever available, statistical data documenting trends and the prevalence of various practice alternatives. It should include salary and compensation information--by type of employment, type of specialty, region of the country. It should include an assessment of the extent to which certain areas of the country--or certain specialties--are over-saturated and practice and employment opportunities limited. The information available through a model recruiting system should also describe who a profession's practitioners are--by age, race, and sex--and it should highlight and emphasize any trends or changes in recent years in the composition of the profession's members. It should note where and how the profession's various member groups practice and/or are employed and any trends or changes in practice patterns and activity levels in recent years.

Because there have been significant changes in recent years in the characteristics of applicants and newly enrolled students in all of the MODVOPPP professional schools, the model recruiting system should include current information regarding these changes and should note in particular the characteristics of applicants and admitted students on a profession-wide and school-by-school basis by race and by sex--characteristics including number of applicants, applicant to first year enrollment ratios, average GPAs and, if used, professional aptitude test scores, and age and prior experience backgrounds. Information about training requirements, schedules, sequences, and opportunities profession-wide and on a school-by-school basis should be detailed; and policies and procedures and exceptions and options involving application and admissions at individual schools should be explicit.

Much of the information suggested here as essential to the content of an effective model recruiting effort is information which is often only available through informal networks, if at all. Much of it is information which is particularly important for women (and in some instances, minorities) to have because it describes changes and trends in the professions which may have particular recruiting importance and appeal to them--most notably, those changes which suggest that women are entering the profession(s) in increasing numbers and thus reducing the extreme degree of male sex-typing the professions have traditionally displayed; and changes in practice patterns and options which promise more opportunities for professional practice which are compatible with other life roles and interests. Much of this information is available to the diligent researcher in various journals, studies, and other sources, but it is not as available to potential applicants as it could and should be.

Finally, the information presented to the prospective applicant in a model recruiting program should reinforce the message that women are desired and/or legitimate members in the profession. Extensive use of photographs and illustrations showing women in a range of positions, authorities, and situations in professional practice and school settings complemented with sensitive language use strengthens the positive recruiting impact that high density factual content provides. In this regard, we believe statements explicitly welcoming women into the profession--without at the same time stereotyping their possible forms of participation--are effective and important parts of a positive recruiting message.

Recruiting Media

Multiple media presentations should be part of an effective recruiting effort in order to broaden the range of groups and settings through which recruiting information can be disseminated. Films, filmstrips, slides, pamphlets, brochures, newsletters, individual college catalogues, career day displays and presentations, personal lectures and presentations, workshops, and mixed media formats are all desirable possibilities which have been used in varying combinations in some of the MODVOPPP professions and schools. Given women's general lack of access to formal institutional sources of recruiting information as well as to the informal preprofessional and professional networks, multiple media formats are important because they maximize women's opportunities to obtain information.

Written and audio-visual materials should always be supplemented and accompanied by personal contact whenever possible. Our findings indicate that personal contact with a member of the profession--and for women, particularly with another woman or a highly supportive and encouraging man--is often a critical, if not the critical, catalyst in influencing a woman to consider and apply for admission to one or more of the profession's schools. Given the high degree of interest we found among MODVOPPP women students and faculty members in recruiting other women to their professions, an extensive system of personal recruiting contacts and missions would be a feasible and relatively simple addition to whatever audio-visual and written materials schools and professional and educational associations currently use. In short, a high-density, saturation-type recruiting system is the most effective method for reaching those who typically lack access to information available through normal formal and informal channels.

Sponsors

An effective recruitment model for the MODVOPPP professions should include multiple sponsors. Individual schools, the professional and educational associations, and women's and student associations and caucuses when they exist, should each play a part in extending the system's scope, thoroughness, and reach. The professional and educational associations, for example, should use the materials associated with centralized application services and/or professional aptitude tests to include specific recruiting messages aimed at women as the Association of American Medical Colleges currently does through its centralized application service. The associations should produce and serve as "lending libraries" for expensive and/or complicated materials which are not required for distribution and/or are not economic to produce in quantity--for example, audio-visual programs such as slides, films, cassettes, and displays, trained lecturers, and workshop leaders for high school and pre-professional school career days, health professions' counsellors' conventions, and so on. The associations are also in the best position to produce certain kinds of materials designed for distribution by the schools and by practicing clinicians--materials, for example, which provide information about the profession, its members, and its opportunities as opposed to information about particular individual schools. The American Dental Association, for example, provides such materials to practicing clinicians who receive requests from patients and others interested in learning about the profession. Women's and students' groups should participate in preparing materials and/or should serve as advisors to those in the associations and schools who do prepare materials since women and students are more likely to be sensitive to those features of the professions which would have particular recruiting appeal for women if properly presented and described. For the same reason, representatives of women's and students' groups are likely to be among the most enthusiastic, supportive, and encouraging personal recruiters the associations and schools can use as part of an intensive recruiting system.

Schools may be the most important recruiting sponsors of all, because it is typically to the schools that prospective applicants turn for information about professional opportunities and requirements. Therefore the brochures and pamphlets schools prepare describing the profession and describing the school itself are critical components in the model recruiting system. Schools should be attentive to the information content and its presentation in their written materials. They should supplement those materials heavily with personal recruiting missions to local feeder schools and with audio-visual and other materials available through the professional and educational associations. MODVOPPP school administrators typically have personal contacts with health professions advisors in preprofessional schools in the immediate geographic area. MODVOPPP school administrators should use these contacts to monitor and assure that women students receive written and verbal information about their particular profession as a possible career option.

Recruiting Audiences and Targets

Recruiting materials should be prepared for and distributed to multiple audiences at different levels of interest, comprehension, and involvement in the recruiting effort. Materials should be available for organizations of teachers, counselors, and administrators involved in elementary, jr. high, high, and preprofessional schools and should therefore be prepared with different messages and different levels of information sophistication given the age of the students with whom these groups have contact. Since women typically track out of math and sciences early, special efforts should be made to sensitize non-science teachers and counselors to opportunities in the MODVOPPP health professions since it is these teachers and counselors with whom women have the greatest contact--not with those in the sciences and pre-health professions programs (for example, pre-med, pre-dent, etc.). Since the objective of a model recruiting program aimed at women is to reach women, recruiting efforts sponsored by schools and associations should include as audiences or targets those groups and institutions where one would typically find many women--for example, women's colleges and, on co-ed campuses, women's organizations, honor societies, clubs, and so on. We recognize that Title IX regulations when fully implemented may result in the elimination of many single-sex colleges and organizations. However during the transition period, their existence provides a more valuable set of recruiting targets than pre-vet and pre-dent clubs, for example, which typically are heavily male and thus not good recruiting sources for women. Finally, because practicing clinicians are often key sources of both information and encouragement or discouragement to young people considering their professions as future career possibilities, professional associations should assume particular responsibility for disseminating information to clinicians about the expanding opportunities in the profession for women. As part of the recruitment effort, the associations should also assume responsibility for educating their clinician members as to the desirability and inevitability of including increasing numbers of women in the profession. Annual association meetings at the national, state, and local levels,and association periodicals including journals and newsletters are ideal vehicles for this part of the recruitment/education effort. On a long term basis, an education campaign of this type is also essential to help create and/or expand a professional environment in which women are viewed as legitimate and valued members of the profession.

Admissions Model

In all of the MODVOPPP professions women appear to be successful applicants to the schools since, on a profession-wide basis, they have been accepted into first year classes in numbers proportionate to their representation in the applicant pool. However, on a school-by-school basis, women do not necessarily fare as well. Individual school variations in the percentage of women admitted to first year classes compared to profession-wide averages and women students' reports of uncomfortable interviews at various institutions suggest that biases against women still operate at some schools and limit their success as applicants to those institutions. Thus the objectiva of a model admissions system must be to neutralize or eliminate any systemic or participant biases which discriminate against women and/or limit their equal chances for success in admissions. The key considerations in developing a model admissions system are: the applicant screening procedures and criteria a school uses; the agent responsible for applicant screening and selection; preparation and training for participants in the admissions process; interview procedures; final selection procedures; and appeals procedures.

Applicant Screening Procedures and Criteria

Screening procedures and criteria which involve and utilize multiple perspectives and sources of information should be used throughout the admissions process as one mechanism for off-setting and neutralizing the possibilities of built-in biases in the admissions system. For example, narrowing the applicant pool and/or selecting final applicants on the basis solely of science and math GPAs and aptitude test scores tends to work against women whose early socialization and educational training typically tracks them out of these fields, and the differences in scores between men and women may not be sufficiently significant to justify the heavier impact such screening has on women applicants. By contrast, utilizing full GPAs, all parts of a professional aptitude test, letters of recommendation, and personal statements allows more varied information to be included in the basis for applicant screening and also helps offset and neutralize biases inherent in any one of these items. For the same reason, screening procedures which involve multiple readers reviewing applicant files and screening among them for further consideration and/or final selection are preferable to systems which use simple quantitative (often computerized) cut-off levels based on limited items such as GPAs and/or aptitude test scores only.

The Agent Responsible for Applicant Screening and Selection

Admissions systems which utilize committees as the responsible agent for applicant screening, interviewing, and final selection appear to be more effective in assuring women's success as applicants than systems which utilize an individual administrative officer to assume these responsibilities. To maximize a committee's potential and ability to neutralize any sex biases which might work against women in the admissions process, admissions committees should include in their membership individuals of different ages including students; men and women; pre-clinical and clinical faculty members;

administrators; and representatives of different racial and ethnic groups. Whenever possible committee members should be elected and/or appointed by student, faculty, and administrative groups to help assure that they reflect and are sensitive to many points of view. Terms of service or membership should be renewable but of limited duration to increase chances of membership turnover and consequent opportunities for new and changing points of view. An admissions committee and its members should be responsible for all functions in the admissions process including choice of screening criteria and procedures; conduct of the screening; conduct of interviews; choice of procedures and criteria for final candidate selection; and designation of procedures for, and handling of rejection appeals.

Preparation and Training for the Admissions Process

Admissions committee members and other school participants in the admissions process should receive training and prepare for their participation in the admissions process. Preparation should minimally include admissions committee reviews and discussions of the school's educational objectives and the relationship of those to desired applicant/student characteristics. It should include discussion and agreement on the criteria by which files will be reviewed and the applicant pool screened and narrowed. It should include agreement on the criteria which should be used during and after interviews to assess and further narrow and finally select applicants. Making criteria for file reviews and applicant assessment explicit at an early, preparatory stage in the admissions process helps assure that each individual committee member's assumptions, expectations, prejudices, and preferences are available to other committee members as information which they can use in assessing each others' comments during later committee discussions and/or votes on candidates.

Assuming that interviews are conducted as part of the admissions process, committee members and any additional supplementary interviewers should receive training in interviewing techniques. Training should include assistance and feedback useful in teaching interviewers what information to elicit in an interview; how to phrase questions to get the information desired; how to put the interviewee at ease; behavioral indicators for judging whether an interviewee is at ease and for assessing the extent to which s/he demonstrates desired personal qualities and characteristics sought by the school; and issues in interviewing, interpreting, and "translating" responses given by non-traditional candidates--that is, women and minorities. Training should also include very specific prohibitions against the use of any "women's questions" during an interview.

Optimally, training should be conducted by individuals skilled and experienced in interviewing using role-playing techniques, video-tape and/or group discussion feedback, and other known and tested methods for effective training. Since adequate and/or appropriate resources are not available at every MODVOPPP school to support such training, the MODVOPPP educational and professional associations should assume responsibility for developing and making training materials, workshops, and personnel available to the schools.

Interview Format

Admissions interviews are typically conducted in a one-on-one format (one interviewer, one interviewee), in small groups of two or three interviewers at a time, or in whole committee which may include a dozen or more people. Small group or whole committee interviews are generally the most uncomfortable and anxiety-provoking for the majority of interviewees, although both share the advantage that different points of view and different interpretations of an interviewee's personal characteristics and behaviors can be brought to bear on the same situation. By comparison, one-on-one interviews lack this advantage but provide maximum opportunity for the interviewee's personal comfort and therefore maximum opportunity to present him/herself in the best and most relaxed possible manner. An interviewing format utilizing several one-on-one interviews is preferable because it maximizes the advantages of all possibilities. One interview should be with a woman--if possible, a student.

Selection Procedures

Selection procedures which involved the entire committee in review, discussion, and final selection of candidates through ranking and/or vote continue to build into the admissions process opportunity for varying points of view, expectations, prejudices, and biases to offset and neutralize one another.

In so doing, they approximate impartiality in the total admissions system rather than in any single individual and/or selection criterion or measure used. Open discussions of candidate qualifications coupled with impressions from interviews help bring out any prejudices and discriminatory attitudes which individual committee members may hold toward women (or minorities) and increase the chances that, in a committee of mixed membership composition, such points of view will not heavily influence final selections.

Appeals Procedures

Most schools have informal, unpublished procedures applicants may follow to appeal rejection from the applicant pool at any stage of the admissions process. Typically this involves calling the school's chief administrative officer and/or having an influential practitioner in the profession do so on one's behalf. Informal systems such as this work to women's disadvantage to the extent that women have less access to preprofessional and professional informal networks through which they would obtain the necessary "how it is done" information as well as the support and backing of a sponsor. An alternative to informal, unpublished appeals procedures should be available in every MODVOPPP school. However these alternatives should not and can not continually re-open the entire admissions process to large numbers of rejected applicants. Thus such a system might involve, at a minimum, publication of the conditions or criteria under which a rejected applicant might expect a favorable re-consideration upon appeal and use of a sub-committee of the main admissions committee to review and rule on appeals utilizing explicit criteria and procedures much as those used for original admissions screening and decision-making.

Education Model

The objective of MODVOPPP professional education is to train and socialize students to become active, competent practitioners and involved members of the profession. Thus an education model designed to encourage women's success as students must ultimately be assessed in terms of their success as MODVOPPP practitioners. However, in the short term, women's performance and experiences as students in the MODVOPPP schools may serve as substitute, interim measures and descriptors useful in assessing the degree to which MODVOPPP schools provide equal educational opportunities and services to both their men and women students. Student attrition and academic performance and achievement are two quantitative indicators which, when available, are helpful in assessing comparability of school experience between men and women students and therefore in also assessing women's success as students. Comparability of the quality and content of men's and women's educational and extra-curricular experiences at the schools is also a valuable indicator of the extent to which men and women students complete MODVOPPP training equally-well equipped to move successfully to the next stage of the professional training sequence in their particular profession. Since women typically encounter special problems in their training experiences--problems which reflect and result in reduced access to or possession of the resources they need for success as students and ultimately as practitioners--an education model which encourages women's success can be assessed by the extent to which it addresses women's particular needs and experiences and contributes to a supportive institutional environment. The major features of a model educational system involve: an institution's structure and policies; curriculum structure and content; school programs, services, and facilities; and systems for data collection and self-evaluation.

Structure and Policies

The percentage of women students and the quality and comparability of their educational and extra-curricular experiences with men's appears most significant in schools characterized by an environment of mutual regard and cooperation among administrators, faculty members, and students. In particular, these are usually schools where administrators and faculty members view students as mature, able individuals whose opinions and experiences regarding the school's policies, curriculum, programs, and services are respected and sought. Most often these schools are also characterized by flexible, responsive decision-making structures where the rigidities of bureaucratic imperatives usually associated with large and/or complex organizations are minimized.

Three basic institutional structure and policy features are central to a model educational system for women: the administrative style of the school's chief administrators; the presence and role(s) of women in the institution; and the system's responsiveness to women's requirements.

(1) Administrative Style - The personality, values, personal commitments, and leadership styles of a school's chief administrators and department chairs appear to be the most important set of factors creating and influencing an institution's overall environment and the responsiveness and flexibility of its administration. While the personal characteristics of a school's key leaders and managers are central to its effective operations, unfortunately personal characteristics cannot be readily specified in developing success models for MODVOPPP educational systems. However several operating policies and decision-making structures on which such leaders rely for effective school and/or department management are identifiable, and they can be specified and potentially replicated in other institutions.

First, the chief administrator in particular--but other key administrators and department chairs as well--are typically available and accessible to various constituencies in the institution to hear concerns and discuss opinions and suggestions. This accessibility may be accomplished in several ways: a literal open door policy; opportunity for periodic meetings with various groups; and/or a system of advisory committees. A second and related management technique includes the use of decision-making committees of faculty members, other administrators, and students to participate in setting school policy and programs. Such committees are most effective when their members are appointed or elected by the groups they represent rather than by the school's chief administrative officer and/or by department chairs and also when tenure on the committees is of specified and relatively limited duration.

A third technique or policy which is of particular importance and value to women is an open-information policy. A system of publishing and disseminating information about school policies, procedures, opportunities, and experiences serves to minimize reliance on access to informal networks for vital information, and it also assures that information made available about school policies and practices is accurate. We have already suggested the kinds of information we believe should be included in recruiting materials regarding school programs and policies, representation of women in the institution, admissions rejection appeal procedures, and so on. Similarly, schools should also publish student handbooks which describe and detail the policies and procedures which define the curricula, school requirements, services, program flexibilities, appeals and grievance channels, and other features of the school experience which are of importance to students. Finally, and of major importance to women, the schools should publish the criteria and procedures used in their admissions processes and comparative data on the qualifications of men and women applicants and accepted students. This measure will help offset the incorrect impression frequently expressed by male students that women's admissions are increasing in their institutions only because admissions standards have been lowered on their behalf.

(2) The Presence of Women in the Institution - The visible presence of women students, faculty members, administrators, and active practitioners in the MODVOPPP professions and schools is important for several reasons. The presence of women helps to combat and change the professions' traditional male sex-typing which acts to deter many women from considering the MODVOPPP professions as career options. It helps establish women's presence in the professions as both legitimate and natural, which in turn is important for changing those stereotypes about women which describe their characteristics as inappropriate for MODVOPPP health professionals. The visible presence of women faculty members and administrators in the schools and as active professionals in practice also provides women students with potential role models and sources of guidance and encouragement when they are faced with various choices and problems in the course of their professional training.

At present, since the available supply of women students, faculty members, administrators, and practitioners in all of the MODVOPPP professions, schools, professional and educational associations, and work settings is admittedly limited, several interim compensating policies and procedures should be adopted by the schools and the professional and educational associations to maximize both the presence and visibility of women. As we have suggested earlier, schools and associations should publicize the recent increases in women's representation in MODVOPPP applicant pools and as first year students. Women should be pictured as active and vital members of the schools and professions in all of the professions' and schools' publications

Schools should actively recruit women preclinical and clinical faculty members and administrators by including among their recruiting sources women's organizations and the contacts of the school's current women faculty members and administrators with existing and/or emerging women's informal networks. To compensate in part for limited numbers, schools should assess those administrative and faculty positions which are high-visibility positions in the school and concentrate on filling them with women whenever possible. Similarly, chief administrators and department chairs should use their appointment powers to place available faculty and administrative women in standing committee memberships and chairs, and particularly, critical ad hoc committees such as search committees. Women should be sought and invited to the school as guest lecturers as often as possible as an additional means for maximizing the visibility of those women who already are in the profession.

Professional and educational associations should adopt these same policies and procedures--that is, women should be recruited for and encouraged to seek particularly visible staff positions and association officerships. They should be appointed to key honorary and functional association committees whenever possible. Women's professional associations and caucuses should be viewed as both recruiting sources for these purposes as well as valuable independent groups with which the major professional and educational associations might cooperate in designing effective school and professional recruiting programs. In short, in the immediate future and for as long as the supply of women to fill school and association positions is limited by their past absence in the professions in significant numbers, the MODVOPPP schools and associations should use every available and innovative means possible to maximize the participation, contributions, and visibility of the women who are currently involved in the professions.

(3) System Responsiveness to Women's Requirements - The discriminatory attitudes and behaviors that women students encounter among male faculty members, students, and administrators in MODVOPPP schools (and in postgraduate training settings as well) are often among the most significant and pervasive problems women experience in MODVOPPP professional training. Many mechanisms to limit the expression and impact of such behaviors and attitudes are available to school administrators who recognize sex-bias and its consequences as problems and who are concerned to eliminate both in their institutions. Most of those we suggest here have been used by chief administrators with positive effect in several of the MODVOPPP schools included in this study.

School administrators should begin by issuing explicit--preferably written--policy statements supporting and encouraging the participation of women in the school and the profession and prohibiting and discouraging discriminatory behaviors and the expression of sex-biased attitudes among faculty members and administrators. These statements should include explicit policies and pronouncements prohibiting offensive classroom and laboratory behaviors and materials including off-color jokes, negative remarks about women students and patients in particular and about women in general, and other forms of behavior which would normally make either men or women uncomfortable. These formal policies should be supported by informal meetings and conversations as needed with individual faculty members and administrators who do not observe them. Schools should support such policies with whatever means are appropriate in their institutions to educate and sensitize faculty members, administrators, and male students to the differences in men's and women's experiences at all stages of the MODVOPPP professional training sequence including the special problems and barriers women encounter which men do not. This might be done through school publications, seminars, discussion groups, routine faculty meetings, special presentations, and so on, and might especially include occasional forums and discussion groups convened by both men and women administrators, faculty, and/or students for the explicit purpose of sharing experiences and points of view.

Schools should also establish several alternative formal (and therefore "legitimate") channels for women students to bring their concerns and problems to the attention of school authorities. In order to prevent additional problems for women who use these channels, it should be very clearly understood throughout the institution that the administration expects them to be used and, in part, views them as a desirable mechanism for monitoring and assessing the institution's progress in eliminating or minimizing the expression and/or impact of any sex-bias. Thus the student handbook we suggested earlier should include among its contents specific examples of the kinds of concerns women should bring to the administration's attention through these mechanisms. Those concerns should include classroom behaviors which are discouraged and prohibited; instances where women are denied opportunities to participate in observing and/or conducting certain clinical procedures and techniques; instances where women feel their classroom, laboratory, or clinical performance has been unfairly evaluated; problems with facilities and services which are either inadequate and/or completely lacking; and so on.

Several alternatives are available as effective mechanisms for keeping the administration informed of its progress in eliminating sex-bias on the one hand and providing women with a legitimate and effective means for addressing problems they encounter on the other. These include: a permanent commission or committee on the status of women charged with responsibility for receiving problems and complaints, reviewing them with appropriate administrators and/or those against whom the complaint is made, and recommending solutions in the form of new policies, programs, and/or particular and immediate redress for specific individual problems; an affirmative action office(r) concerned with the admissions and treatment of women students in the institution and responsible for monitoring the institution's progress in improving treatment through a system of regular reports, classroom observations, and other means; an ombudsperson reporting directly to the chief administrative officer with responsibility for hearing grievances and/or offering personal counselling and/or recommending new policies, programs, and services; and periodic formal and/or informal meetings between women students and administrators--meetings called by the administrator for the explicit purpose of gathering information about women's opinions, recommendations, and observations regarding their experiences in the school and the school's effectiveness in creating a responsive training environment for them.

Finally, schools should encourage and support formal and/or informal women's groups which are formed from time to time by women students as personal support groups, special-issue groups, or general-purpose women's "interest" groups. As long as women continue to be a significant minority in the MODVOPPP schools and professions, they will experience barriers and problems which do not confront their male peers. A variety of groups which can address the needs and interests of women with different points of view and expectations about their minority status can be an asset to the school administrator who is concerned with assuring that all students in his institution have an equal opportunity for educational success.

Curriculum Structure and Content

The structure and content of the MODVOPPP health professions schools' curricula are necessarily defined by the professions' technical requirements, the schools' available resources, and to a certain extent, federal policies and funds. However, within the limits imposed by these influences, variation in both structure and content is possible, and some characteristics of both are important features in a model educational system designed to maximize women's success as students.

(1) Curriculum Structure - The single most important feature of a model curriculum structure is flexibility--specifically, a program which permits either accelerated or extended (part-time) attendance and completion of studies. Such flexibility permits each student the opportunity to select the pace of studies best suited to his/her personal circumstances--an opportunity which is important to women who need or wish to combine traditional roles with professional training--and, increasingly, an opportunity which many men also appear to desire. Federal policies and health manpower funds have encouraged accelerated training programs in the past several years, and three-year curricula

are not uncommon in the MODVOPPP schools. However federal funding policies discourage and all but rule-out part-time and extended study since capitation funds are given to institutions only for full-time students. Thus most MODVOPPP schools are reluctant and/or unwilling to permit part-time attendance because it represents a real income loss. Similarly, part-time and other flexible postgraduate training programs are rarely available, and this may also reflect, in part, a situation where part-time programs are uneconomic to the sponsoring institution. That is, since full-time interns and residents typically work far in excess of a forty-hour week, the training hospital or clinic receives an inordinately high return in work on the salary it invests in a full-time resident.

Given the importance of curriculum and postgraduate program training flexibility, federal, school, and hospital policies and program should be reexamined in light of this consideration and revised as possible and necessary. In the next chapter we suggest some program and policy research designed to address the issue of part-time and flexible postgraduate training. Here we simply wish to note the importance of flexibility in all stages of the MODVOPPP professional training sequence and also to suggest that a possible solution to the current MODVOPPP capitation funding problem is for federal policy-makers to consider use of the administrative device of a full-time equivalent student in lieu of a full-time individual student as the basis for future capitation funds. This would permit schools the opportunity to provide extended and/or part-time training to students without capitation income loss.

MODVOPPP schools are increasingly experimenting with curriculum structures which introduce students to clinical experiences early in their training. In general, these experiments seem attractive to women students and, on balance, they also seem to provide a more supportive training experience than the traditional two-plus-two model of preclinical, then clinical training. Most of the women in our study were attracted to their professions at least in part because of a desire to help and work with people (or animals). Early clinical experiences thus served to reinforce their original motives and interests in the profession and provided an important source of support through the rigors of the training process. Additionally, women frequently expressed a sense of confidence and competence in clinical settings and in working with patients--a sense which was often reinforced by the observations of faculty members and male students who believed women to be particularly adept at managing patient relationships. The reinforcements derived from one's own sense of competence and from observations of competence from faculty and peers are important sources of support for building the confidence so essential in a MODVOPPP professional.

Pass/fail grading systems are increasingly common in the MODVOPPP schools. As we suggested earlier, they seem favored by students and also appear to be present in those institutions characterized more often by student cooperation than by student competition. However, as we also noted earlier, pass/fail grading systems may work to women's disadvantage under certain circumstances--most notably because they may not reflect excellent classroom and/or clinical performance and also because they provide minimal information about a student's performance. Thus postgraduate training institution administrators and others may seek and rely heavily on supplementary information obtained through personal contacts with the informal professional network, and this typically works to women's disadvantage. Therefore schools which use various forms of pass/fail grading systems should supplement them with additional student performance systems which are formal, institutionally sponsored, and contain objective data if possible or at least data which is consistent in structure and format. Such systems are less likely than the informal professional networks to operate to the advantage/disadvantage of particular groups of students based on their sex, race, or other personal characteristics.

Schools should also develop and utilize techniques and systems designed to minimize the possibility that individual instructor biases against women in the profession will result in unfair course grading and clinical evaluations. Whenever possible, sex-blind examinations and laboratory experiments should be used (that is, a rotating number system rather than students' names are used to identify exam papers, laboratory experiments, and so on.) In both preclinical and clinical courses and rotations, performance objectives should be detailed, explicit, and written, and they should be used as the basis against which student performance is assessed. In clinical work where sex-blind exams are not possible and where it is also difficult to state and measure the achievement of performance objectives with precision, alternative and/or supplementary methods for minimizing and protecting against biased evaluations of students' work should be used. Examples include: systems where a faculty member prepares a written evaluation of the student's work, reviews it with the student, and obtains the student's written agreement/disagreement/comment and signature; or, systems which use a third party to review with the student the faculty member's written evaluation of his/her work. In all cases, as suggested earlier, students must have available to them formal appeal mechanisms in the event they believe that they have been graded unfairly or denied the opportunity to learn, observe, and participate fully in all aspects of course work. Schools should also establish formal mechanisms for reviewing individual faculty grading policies and procedures to assure that any instances of sex-biased grading are identified and stopped. Similarly, MODVOPPP schools should institute and utilize systems to monitor student experiences at off-site training hospitals, clinics, preceptorships, and other clinical settings to assure that women students receive equal and fair treatment. Cooperating training institutions and individuals which do not provide--or make an effort to provide--satisfactory training environments for women students should be eliminated from a school's clinical training program. Finally, to minimize the problems women experience in clinical settings where they are typically an even smaller minority than they are in the schools, women should have the option to take rotations together if they wish, and that option should be a condition of the agreements MODVOPPP schools make with cooperating training institutions for student placements.

(2) Curriculum Content - To varying degrees, the MODVOPPP professions share several common features which suggest the basis for stressing the inclusion of several non-science, non-clinical courses in the curriculum. First, courses which address human behavior--psychology, sociology, perhaps courses in the problems and issues of death and dying--are all useful preparation for students who will one day need to be concerned with and sensitive to human relationships and interactions. Indirectly such courses would validate and legitimize women's approach to professional practice to the extent that women do appear to concern themselves more often with issues of sensitive patient management. Second, courses which prepare and train students in the

requirements and problems of running a professional practice--of managing a business--are useful preparation for students who may one day establish a solo, partnership, or small group practice. Some schools offer such courses; all MODVOPPP schools should. Women particularly stand to benefit from them since women are less often trained and prepared to assume the risks and responsibilities of business management than are men in our society. Third, courses which acquaint students with current health care issues and trends in general, and in our system of health care delivery in particular, should be part of all MODVOPPP curricula. These courses should include an analysis of past and current federal policies and programs which have had a major impact on the nature of health care in this country today, and they should similarly include an analysis of changes and trends in the institutional, economic, and technical bases of health care delivery. Such courses would be of benefit to all students, not just women. However, they have particular importance for women because by documenting the fact that institutional forms of health care delivery are becoming increasingly important, they also lend professional legitimacy and credibility to those who seek to practice in institutions rather than as professional entrepreneurs. Since institutional forms of practice are prevalent among women and, we suggest, important options for them, their credibility as an acceptable mode of practice stands to women's ultimate benefit.

School Programs, Services, and Facilities

The number and variety of programs, services, and facilities MODVOPPP schools can sponsor to provide equal and supportive training experiences for women are limited only by imagination and funds. However, since many of our women respondents suggested that special programs and services are undesirable because they convey a message of second-class citizenship to and about women, these programs and services must have the public support of the schools' chief administrators so they are viewed as legitimate measures designed to minimize and eliminate the very real systemic barriers women face in professional training. The programs, services, and facilities we include here are limited to those which seem to us the most crucial in eliminating the major barriers women face in professional training, and in fact they are few.

First, MODVOPPP schools and other cooperating training institutions must integrate those facilities which are central to a student's formal and informal learning experiences. Student and practitioner lounges, showers, sleeping rooms, locker rooms, housing, and other facilities must be designed to accommodate both men and women. Separate facilities are not equal facilities in MODVOPPP professional training. Integrated facilities (with modesty screens which interfere with vision but not with hearing, if desired) should be required in all MODVOPPP training institutions. And, of course, gowns, gloves, and other equipment in women's sizes should be readily available.

Second, the MODVOPPP schools should develop and provide special counselling services for women. These services should include counselling regarding specialty selection and practice options and should be designed to provide women with the kind of information that male students typically obtain through the informal professional network. This can be accomplished in part by staffing the counselling program with those faculty members and administrators who are known and generally understood to occupy important and pivotal positions in their specialities and among their professional colleagues. Counselling services should also include personal counselling for those women who desire it. Many do not. However for some, personal counselling is an essential service which substitutes in part for the absence of a personal support system which is so crucial during the years of rigorous MODVOPPP training. Thus it is especially important at small, free-standing institutions where the resources of a larger university community are not available and also in schools where there are still few women students.

Third, MODVOPPP schools should provide formal assistance to students in locating and obtaining curriculum-required work experience such as summer preceptorships, externships, and so on. Similarly, schools should sponsor special assistance and programs in locating and obtaining jobs, practice opportunities, associateships, and so on. Women typically are at a disadvantage in seeking both kinds of placements because much of the information available about these opportunities travels through the informal networks to which women often do not have access. In addition, schools are in the best position to accumulate information over time regarding the treatment and experiences women can expect in certain placements, to make that information available to them, and to refuse the school's referral services to institutions and individual practitioners who discriminate against women.

Fourth, MODVOPPP schools and postgraduate training institutions in particular should provide child-care provisions to their students--both men and women. In institutions which are large enough, on-site facilities and programs may be possible. In smaller institutions, cooperative arrangements with community facilities and/or other schools in the area may be possible.

Fifth, schools located in high crime rate areas should assure that parking lots, walkways outside of buildings, and other vulnerable areas are well-lighted and that escort and security services are provided in the evenings or as often as necessary. In addition, or perhaps as an alternative to escort and security services, self-defense courses for faculty and students--particularly for women--might be organized and offered by the schools.

Finally, schools must be extremely careful to assure that men and women students seeking financial aid receive precisely the same treatment under official school policies. For example, if male students can obtain dependency allowances for their wives to remain at home, women students' husbands must be similarly eligible for such allowances. Federal policies which dictate eligibility for financial aid should also be carefully reviewed to determine whether they have a disproportionately heavy impact on women. For example, all forms of federal financial aid at present require that a student's parents contribute to his/her educational support if the parents are financially able. There is currently no provision for situations where parents are able but unwilling--a situation which does occur for some women students. Such policies must be reconsidered or special circumstance exemptions built-in to them. Otherwise schools which make informal exemptions--and there are some--run the risk of loss of funds in future federal audits.

Systems for Data Collection and Self-Evaluation

All administrators and decision-makers depend on timely and accurate information to guide their organizations' operations and assist them in establishing and modifying policies, procedures, programs, services, and organizational structures. MODVOPPP schools should periodically and routinely collect, aggregate, and analyze certain kinds of information in order to assess their effectiveness in eliminating barriers women face as successful applicants and students.

Schools should keep careful records of their recruiting efforts--which materials, recruiters, feeder schools, career day presentations and displays, and so on, are particularly effective or ineffective in developing applicant interest among women. Such information will assist the schools in improving their recruiting programs and will also help identify those feeder schools which may be uncooperative and/or experiencing problems in their counselling systems in providing women with information and encouragement regarding possible MODVOPPP professional careers.

Schools should keep extensive records on the background and performance characteristics of their applicants and accepted students in order to compare similarities and differences and locate potential problems and systematic biases in their admissions systems. They should monitor and be sensitive to any patterns which unduly favor applicants with extensive personal contacts with and support from practitioners in the profession. In particular, school administrators should monitor and be sensitive to potential prejudices against women in admissions among particular members of admissions committees. They should also routinely follow-up and interview or survey applicants accepted for admission who do not enroll to determine whether there are systematic problems in the admissions system which should be addressed and corrected.

Finally, schools should keep and aggregate yearly records of attrition by type and by reason. Type of attrition should include transfers to other schools, transfers to other professions, temporary drop-outs/returns, and permanent drop-outs. Reasons should include, at a minimum, academic problems, personal stress, financial problems, family problems, new or modified career interests, and so on. Attrition types and reasons should be sufficiently comprehensive to provide schools with a basis for determining whether any differences in men's and women's attrition rates are attributable to school policies and the behaviors of school representatives which create particular problems for women and which require attention and modification.

STRATEGIES FOR MODEL TESTING

Future efforts to test the recruitment, admissions, and educational success models and their components presented in this chapter depend on the availability on a school-by-school basis of two major categories of information: (1) data necessary to construct the quantitative and descriptive indicators we have defined and used as success measures for women applicants, students, and ultimately professional practitioners, and (2) information describing the model components present or absent in each MODVOPPP school and, where appropriate, in professional and educational associations and cooperating training institutions such as hospitals, clinics, and so on. Generally, all basic test designs would attempt to demonstrate positive associations between the presence of all or a majority of the recruitment, admissions, and educational model components in MODVOPPP schools on the one hand with changes in women's demographic and performance characteristics and experiences as applicants, students, and practitioners on the other. If the models are effective in encouraging success, men's and women's demographic and performance characteristics and experiences should become increasingly similar over time.

Future efforts to test these models, however, are likely to be hampered by several difficulties. First, much of the data required to construct the necessary demographic and performance success indicators is not available; it is available on a profession-wide basis but not on a school-by-school basis; or it is available in individual student records and files but not aggregated in a useable and useful form. This is particularly true of information about men's and women's application, admissions, and educational training experiences--information which is needed to develop descriptive indicators of equal access to the MODVOPPP schools and professions. Second, to our knowledge, systems for defining, collecting, and analyzing information identifying the presence and describing the operations of the various components included in the three success models do not exist. That is, with some exceptions principally in medicine, no professional or federal organizations or agencies systematically and routinely collect information on the structures, programs, policies, facilities, and services of the MODVOPPP schools.

Finally, and perhaps most important, our review of 27 of over 300 MODVOPPP schools suggests that few schools currently include in their recruitment, admissions, and educational systems many or the majority of components we suggest are important for encouraging women's success as applicants and students. Some of these components would be relatively easy for schools to install if their chief administrators were aware of the components' utility and importance in minimizing barriers to women's access to the schools. For example, changes in the information content and illustrations in school catalogues and recruiting brochures can be readily incorporated without major alterations in school policy, structure, or resources. Installation of other components, however, may be severely restricted by available funds and/or internal institutional political constraints--for example, modification of currently segregated physical facilities such as housing, shower and locker rooms, on-call sleeping quarters, and so on.

Thus the test strategies we suggest here are based on and include several broad programmatic and policy proposals designed to address these difficulties of inadequate data and limited operating examples of the models' components in the MODVOPPP schools. The proposals include among their major objectives (1) the encouragement of more comprehensive and systematic applicant, student, faculty, and institutional data collection by MODVOPPP schools and professional and educational associations and (2) the wide-spread installation of and experimentation with the success model components by the schools and associations. The proposals are four and include: an information dissemination and technical assistance program for the MODVOPPP schools and associations; a MODVOPPP schools self-evaluation program; a program of national pilot demonstration projects; and a profession(s)-wide test program.

Before reviewing these proposals, three observations should be made. First, these proposals might have been included and discussed in the next chapter, Study Implications and Recommendations, since they involve and require federal administrative and possibly legislative attention and authority for implementation. However they are included here, because without them neither short nor long-term tests of the proposed success models are likely to be possible or informative.

Second, all of these proposals assume that the majority of key decision-makers in the MODVOPPP schools and major professional and educational associations share a desire and/or willingness to recognize, understand, and work to eliminate the barriers women face as successful MODVOPPP health professions applicants, students, and practitioners. In this regard, the Introduction to this report notes that among the schools visited in this study, we identified four groups of administrators and faculty members: those already committed to and involved in implementing policies and programs they believe supportive of women but perhaps occasionally in need of an ally in the form of federal policy and/or programmatic support; those committed to change but in need of technical assistance and information to accomplish it; a third group requiring information and education to assist them in understanding the issues and problems women face; and a fourth group which feels there are no barriers or sex discrimination in their professions and schools and thus not interested in change at this time. The proposals presented here assume that the first three of these groups constitute a majority of MODVOPPP schools and association administrators and faculty. The proposals are based on the assumption that these are people of good faith who will work to eliminate sex-bias in their institutions and professions and to create maximum opportunities for equal access to success by women and all applicants if given the necessary tools to assist them--tools including information, education, technical assistance, and a variety of political and economic incentives. We base these assumptions on the generally positive receptions we received during the course of the study when we were invited by several MODVOPPP associations and/or individual school administrators to share study findings and to suggest specific activities which the associations and/or schools might undertake to eliminate barriers women face.

Third, these proposals necessarily assume that HEW and its various agencies and authorities--the Women's Action Program in particular--are committed to eliminating barriers which limit or deny women equal opportunity for equal access to the MODVOPPP schools and professions--barriers which are thus discriminatory in their consequences for and impact on women. Many of the barriers we have identified and discussed in this report are not and may never be forms of discrimination as that term is currently legally defined in anti-sex discrimination legislation, regulations, and legal precedents. Thus they represent individual and combined policies, behaviors, programs, and other factors operating in the schools and professions which are not necessarily actionable but which are discriminatory as we have defined that term for purposes of this study. That is, they are discriminatory because they result in unequal access for women to the resources they need for success as MODVOPPP applicants, students, and ultimately practitioners.

Information Dissemination and Technical Assistance

The barriers to success which women face as MODVOPPP health professions applicants, students, and ultimately practitioners are complex, deeply rooted in our social structures, institutions, traditions, and beliefs, and not widely understood. The more immediate day-to-day problems and needs which women experience as MODVOPPP applicants and students which are not shared by their male peers are similarly not widely understood, nor are the kinds of interventions--the success models' components--which are effective in addressing those problems and needs. Thus a first step in implementing and testing the recruitment, admissions, and educational models proposed in this chapter should be a program of information dissemination and technical assistance to the MODVOPPP schools and professions. The results of this and other related studies should be shared with key decision-makers, administrators, officers, and other influential individuals in the MODVOPPP schools and professional and educational associations. Particular emphasis should be given to: the recruitment, admissions, and educational success models; their components; the basis for predicting that installation of the maximum number of components in each model will facilitate success for women in the schools and professions; and suggestions for and/or assistance in implementing the models' components.

An effective program of information dissemination and technical assistance should include a combination of several projects. Presentations should be made to annual and other periodic meetings of MODVOPPP professional and educational associations including student and women's associations and caucuses and special groups within the professions such as Councils of Deans. Presentations in a lecture/question and answer format are useful. Workshop and seminar presentations designed to encourage the participation and free exchange of ideas among participants would be even more effective; and such presentations supplemented with carefully prepared audio-visual aids and printed materials for dissemination would be the most effective. A second important and related project should include the preparation of specially-prepared articles or a series of articles for each of the MODVOPPP profession's professional and educational journals and newsletters. The series should be tailored to each profession and be designed to sequentially introduce the reader to the barriers and then the effective intervention strategies which have particular relevance for women in the profession. Third, a set of technical-assistance oriented materials (preferably multi-media) should be developed for distribution to the schools in each profession with each item in the materials package centered on one of the recruitment, admissions, and educational models and its components. The materials should be designed for maximum utility without additional outside assistance.

This program assumes that many MODVOPPP associations and schools would welcome its information and that they would utilize it to proceed with programmatic and policy activities designed to implement many of the success model components. Because one of those components includes data collection for purposes of school management and self-evaluation, this program may also be useful in stimulating improved data collection and analysis efforts by individual schools and by the MODVOPPP professional and educational associations. However, we suggest that a specific and discrete MODVOPPP schools' self-evaluation program should also be included for consideration among proposed test strategies.

School Self-Evaluation Program

A self-evaluation program involving technical assistance materials and/or consultation and training should be implemented to assist schools in developing their own capability to assess the effectiveness of their recruiting, admissions, and educational systems. A series of "how-to-do-it" manuals, workshops, and other forms of assistance should be the basis for specifying and identifying the data required to develop indicators and criteria for self-evaluation; techniques for collecting and aggregating the data; techniques for its analysis and interpretation; and guidelines for its presentation to and use by key administrators, department chairs, school committees, and other groups with authority to modify and/or to establish new policies, procedures, programs, services, facilities, and organizational structures supportive of women applicants and students. The self-evaluation system should be based on and utilize the data, data collection methods and sources, indicators, criteria, performance standards, and model components proposed and used in this study; and the technical assistance materials should be designed to enable interested institutions to essentially replicate this study for purposes of testing and assessing the effectiveness of their own recruiting, admissions, and educational systems as well as any of the components we propose here which the institutions already have in place or which they elect to install.

National Pilot Demonstration Projects Program

In several schools we visited in this study we were pleased to discover some very innovative and creative programs and services which administrators, faculty members, and women students all credited as playing an important role in creating a supportive and encouraging environment for women applicants and students. These experiences plus our familiarity with other federal agency efforts to develop and test innovative demonstration models lead us to believe that a national pilot exemplary models program would be a welcome and effective way to accomplish two objectives: (1) to test some of the success models and their components presented here which may be difficult for schools to implement without additional funds and/or the political support of a national programmatic effort, and (2) to expand the models' components with innovative, exemplary programs and policies already in operation at various MODVOPPP schools and associations which did not come to our attention and may not be known to association and school administrators throughout the MODVOPPP professions.

Basically a national pilot exemplary models program would involve funding experimental or model programs; evaluating them for effectiveness; and documenting and disseminating the results of successful programs and encouraging their replication in other schools. Several major activities would be required to design and implement such an effort.

Initially an administrative and policy-making structure or body must be established. Such a structure might be designated the National Exemplary Project or Models Board and be composed of federal representatives, members of the MODVOPPP professional associations and schools, and others. The Board would be charged with development of guidelines for the program including: selection and/or funding of exemplary projects and models; evaluation of the effectiveness of those projects and models selected; dissemination of evaluation results; and possible provision of funds and/or technical assistance and training for replication of successful projects in other schools and professions.

Developing a set of criteria and procedures for identifying and selecting certain model or exemplary schools and programs would be the Board's first task. The initial criteria and models selected should include the criteria and models developed in this study. Procedures for identifying model schools and programs might include: self-nomination to the Women's Action Program, and/or the suggested National Exemplary Projects or Models Board or other appropriate agency; nomination by the professional or educational association; and/or nomination or selection by other federal program agencies familiar with the schools, their operations, and their projects.

Second, a set of procedures for validating the exemplary status and effectiveness of selected schools and projects would be required. These might include brief off-site and/or on-site evaluations and reviews of the school and its activities and its program to determine whether, in fact, the models and projects are exemplary as represented.

Third, a system for documenting the models and disseminating information to other schools and professions would be required. This might involve the preparation of handbooks, manuals, brochures, films, slides, presentations, information summaries, and other forms of information dissemination designed to reach and inform decision-makers in other schools, professions, and professional associations who might be interested and instrumental in replicating the model in their school or profession. Finally, the scope of such an effort might be extended to include technical assistance and training as well as programmatic funds to other schools and professions interested in replicating the model or pilot programs deemed exemplary and effective in encouraging women's success as applicants and students.

A National Exemplary Projects or Models Program such as this would be likely to require legislative authority to implement and fund. Thus it may not represent a viable--and certainly not an immediate--strategy for either testing the models proposed in this study or expanding them to include additional components. Consequently, a test involving the conscious and deliberate installation and evaluation of one or more of the models proposed here might be conducted on a more limited basis through, and with the cooperation of, one (or several) of the smaller professions.

Profession(s) Wide Test Program

A profession-wide test of some of the models or model components--particularly those which involve only policy, procedural, or organizational changes or initiatives but not additional or substantial funds--may be possible in one of the smaller professions which has few schools and close communication among the schools and the professional and educational associations. Such a test would require the participation and cooperation of all of the schools in the profession in order to determine the effectiveness of certain components on a profession-wide basis. For example, an integrated schools and association recruiting program coupled with admissions systems based on the models proposed in this chapter would permit a relatively short-term test of the effectiveness of both in increasing women applicants and students in the professions' schools. Similarly, in some of the smaller professions, the effectiveness of coordinated policy statements and educational programs sponsored by association and school chief administrators and aimed at discouraging expressions of prejudiced attitudes and behaviors toward women students within the schools and by professional practitioners could be relatively quickly and efficiently assessed. The unique advantage offered by a profession-wide test in a small profession is that it can be implemented quickly and in all of the schools rather than in a sample of schools. This would minimize the impact of outside forces and influences. Further, because many of the smaller professions are also the least well known and visible and have the smallest proportions of women, they are also likely to benefit most from and thus be most enthusiastic about participating in a test of a recruiting and an admissions model designed to encourage women to consider their professions.

V. STUDY IMPLICATIONS AND RECOMMENDATIONS

The purpose of the model recruitment, admissions, and education systems developed in this report is to maximize equal opportunities for women's success as MODVOPPP health professions applicants, students, and ultimately practitioners by providing the Women's Action Program and, presumably, other appropriate HEW agencies with preliminary guidance for: (1) ways in which the Department can improve its present process for evaluating the effectiveness of affirmative action plans for women submitted by the health professions schools in compliance with provisions of the Public Health Service Act and the Higher Education Act; (2) changes in federal policies which will work to eliminate barriers to women in the health professions; (3) affirmative actions for women which the Department could suggest to the schools; and (4) ways in which federal program planning and support money to the schools can be better allocated for maximum impact in eliminating existing barriers to women. The objectives, the success indicators, the criteria and performance standards, the specific components, and the test strategies suggested for the models are all designed to provide such guidance.

The purpose of this chapter is to further draw together some of the study's key findings and their implications for anti-sex discrimination enforcement and affirmative action; for health manpower legislation including particularly MODVOPPP student financial aid; and for future research, policy, and programmatic efforts which might usefully be undertaken by the Women's Action Program, other appropriate HEW agencies, MODVOPPP professional and educational associations and schools, and other research-oriented and interested groups. Before we proceed to a discussion of the study's implications for anti-sex discrimination enforcement and health manpower legislation, however, we wish to observe the bases for and limits of those discussions.

First, this study was not designed to evaluate either past, current, or proposed anti-sex discrimination enforcement procedures; and it was most specifically not intended to conduct an examination of the extent to which various MODVOPPP schools have been or are in compliance with the anti-sex discrimination provisions of Titles VII and VIII of the Public Health Service Act and Title IX of the Higher Education Act. To the contrary, the precautions we have taken to assure anonymity of the institutions we visited and the individual respondents we interviewed--including protection of institutional identities and, in the majority of cases, even locations from the Women's Action Program--were precautions designed to assure the study schools that our visits were not compliance visits and that the information we gathered would not be shared with the Office of Civil Rights. Thus our discussions of anti-sex discrimination enforcement and affirmative action are based principally one: a review of sex discrimination in student admissions and treatment in educational institutions as defined and prohibited in Titles VII, VIII (Public Health Service Act), and IX (Higher Education Act) and their regulations; one brief meeting in the summer of 1975 with the Higher Education Division of the Office of Civil Rights (OCR) to obtain some sense of the compliance monitoring issues and procedures the Division was then considering for enforcement of the three titles; and this study' findings regarding the barriers to success women face as MODVOPPP applicants and students.

Second, our comments on health manpower legislation--particularly on past and current provisions and administrative regulations defining student financial aid--are focused solely on implications for women's access to the MODVOPPP health professions and schools. We realize that health manpower legislation is a federal policy vehicle designed to address some of the nation's priority health manpower concerns. These concerns are broader than the issues involved in assuring equal opportunities for women and minorities to participate in the MODVOPPP health professions as students and practitioners. However, these concerns do include the issue of equal access and non-discrimination, and it is to the implications of various legislative and administrative provisions for women's access to the MODVOPPP health professions that we address our comments.

IMPLICATIONS FOR ANTI-SEX DISCRIMINATION ENFORCEMENT AND AFFIRMATIVE ACTION

In our judgment, this study's findings have important implications for three major and related issues involved in federal efforts to enforce recent legislation and regulations prohibiting sex discrimination against students in admissions and treatment in institutions of higher education in general, and in MODVOPPP health professions schools in particular. First, our findings raise the difficult question of what constitutes adequate and effective procedures for assuring compliance. Enforcement of the anti-sex discrimination provisions of Titles VII and VIII of the Public Health Service Act and Title IX of the Higher Education Act is a responsibility of HEW's Office of Civil Rights (OCR), and OCR's procedures for assuring compliance have been subject to much change and controversy in the past several years. Part of that controversy was a proposal by OCR to cease handling individual complaints of sex discrimination experienced at individual institutions and instead to substitute grievance mechanisms and voluntary compliance procedures in each school coupled with an information-based compliance monitoring system operated by OCR. Public opposition to this proposal--particularly to OCR's withdrawal from the complaint process and to the use of grievance mechanisms at individual schools--was evidently sufficient to move OCR to cancel it. However, the problem which apparently stimulated the proposal in the first instance presumably still remains--that is, that the volume of individual complaints of sex (and race and other forms of) discrimination OCR receives is more than it can quickly accommodate. Thus the complaint process is ineffective and inefficient because it is time-consuming and slow. It also has the disadvantage of depending on individual rather than institutional initiatives for activation. Further, it is a punitive process which by its very nature provides no positive incentives to schools to monitor and seek to eliminate discrimination on their own.

Second, it is our understanding that, at least at present, OCR's Higher Education Division intends to apply whatever monitoring and/or compliance procedures it develops and uses for institutions of higher education to the MODVOPPP health professions schools as well. Given their male histories, traditions, and orientations and their objective to socialize their students in those personal attributes and behaviors considered appropriate to new members of the profession, we believe there are very real differences between women's experiences and treatment at these schools and, for example, their experiences in undergraduate or graduate schools in the arts, humanities, and sciences. These differences should be reflected in the type and intensity of the monitoring and complaint investigations OCR conducts.

Third, and most important, sex discrimination against students is, in a legal sense, not yet well-defined. Prohibitions against sex discrimination in the admissions and treatment of students in educational institutions is recent and only dates back to the Public Health Service Act of 1971 and the Higher Education Act of 1972. Regulations for implementation of both pieces of legislation were published in final form less than one year ago in the summer of 1975. The only case law precedents regarding discrimination in student admissions and treatment in educational institutions are based on Title VI of the 1964 Civil Rights Act which prohibits discrimination based on race, and the precedents in institutions of higher education are few. However, within the limits of available regulations and legislative interpretations, certain findings of this study represent what we believe to be clear violations of the anti-sex discrimination provisions of Titles VII, VIII, and IX. Others are not as clear.

For example, Titles VII, VIII, and IX all require equal treatment of men and women in recruitment and admissions. Yet, throughout our study and throughout this report we have noted example after example of the following actual or suspected differences in treatment:

- Women's reports of failure to receive information, materials or encouragement from preprofessional school teachers and counsellors regarding consideration of MODVOPPP professions as a career choice, and, in many instances reports of active and overt discouragement.
- Cases of MODVOPPP schools which recruit by mail or direct visits to predominately male institutions without comparable recruiting efforts at predominately female institutions.
- Instances where MODVOPPP schools attempting to reach and recruit women at coed institutions received little or no cooperation from those institutions in disseminating materials, contacting women students, inviting them to recruitment meetings, and so on.

- Numerous reports of admissions interviews where women were asked a variety of "women's questions" regarding current and future marital and parental status and/or where women were challenged to justify or explain why they should be "given a man's place".
- Repeated assertions by administrators and faculty members at individual schools that the women applicants accepted for enrollment were superior in their qualifications to men--suggesting at least the possibility that women equally qualified with men were denied admissions and certainly indicating a need for closer examination to determine whether or not that occurs.
- Examples of schools where the percentage of women in entering classes has remained steady for several years regardless of variations in their representation in the school's applicant pool--again suggesting a kind of quota system and discrimination in admissions worth investigation.
- Examples of schools with a substantially smaller percentage of women in their first year classes than the profession-wide average--again, an indication worth examination that discrimination in admissions may exist at such institutions.

Equal treatment of men and women after admissions and during training is also required, specifically and explicitly by Title IX, and we found many instances of unequal and actionable treatment of men and women students including:

- Examples of school policies regarding student aid budgets which treated the dependency status of men's and women's spouses differentially.
- Instances where school-owned and sponsored housing was available to men but not to women students.
- Examples where housing information was provided to men, but not to women students by school-sponsored students wives' (not spouses') clubs receiving school support in the form of clerical assistance, facilities for meetings, and so on.
- Inadequate or absent clinical facilities for women including on-call sleeping rooms, shower and locker rooms, and sex-segregated practitioners' lounges, cafeterias, and lunch rooms.
- Placement activities sponsored and conducted by the schools which discriminate against women by complying with employer, preceptor, or training hospital/clinic/other institutional

requests and preferences for, typically, only white male students. In these cases the school is, in effect, acting as an employment agency and as such should be controlled by the mandates of Section 1604.6 of the Equal Employment Opportunity Act of 1972 which states that "An employment agency that receives a job order containing an unlawful sex specification will share responsibility with the employer placing the job order if the agency fills the order knowing that the sex specification is not based upon a bona fide occupational qualification."

- Examples of school-sponsored recreational activities for men which were less available or unavailable to women.

While these examples of differential treatment of men and women students are clearly prohibited by anti-sex discrimination legislation and regulations, other examples of differential treatment are not clearly defined as discriminatory and their status as actionable is ambiguous--for instance:

- Lecture material and content including "nudie slides" and jokes and remarks which are intended to "liven up the class" and establish rapport with male students but embarrass, annoy, or offend women students.

- Comments by male faculty members and administrators challenging women's rights to be in the school or profession on the grounds that "You won't practice", "You are taking a seat away from a man", "Women cannot get top grades in my class", "I never give recommendations to a woman", or "You should be home raising babies".

- Faculty and administrative behaviors which encourage--or at least do not discourage, discipline, or prohibit male students from expressing prejudiced behaviors and attitudes toward their women peers.

- Formal, written descriptions, assessments, and recommendations regarding women students which are based on characteristics and attributes which, however complimentary they might appear, are unrelated to their professional performance and demeanor and may inadvertantly serve to reinforce unprofessional and inappropriate stereotypes about them--for example, letters of recommendation pointing out physical appearance, skills in cooking and sewing, and other descriptors which are not typically found in analogous form in men's letters of recommendation.

We have defined such instances of differential treatment as discriminatory in the sense that we have used that term in this study--that is, as forms of treatment which limit women's access to the resources they need for equal opportunities for success as MODVOPPP applicants, students, and ultimately practitioners. However, whether such instances of differential treatment would be interpreted as discriminatory and therefore actionable by OCR and/or the courts is not clear. (The controlling question for such an interpretation would probably be whether such actions by faculty and/or administrators are performed under the official authority of the institutions and whether that is the paramount consideration. The issues involved in such a ruling are laid-out in the Title VI Civil Rights Act cases Joyner v. Whiting, #341, F. Supp. 1244, and 477 F.2d, 456.)

However, given these issues of appropriate enforcement procedures and/or emerging, still unclear definitions of sex discrimination, we believe our study's findings suggest that the most effective approach to Titles VII, VIII, and IX compliance in the MODVOPPP schools should include both an individual complaint system and a routine compliance monitoring system. We share with others the view that the complaint system is needed to provide individuals an opportunity to seek redress for individual instances of discriminatory treatment without the undue risk or fear of repercussions which individual institutional systems may foster; to provide a mechanism for aware and concerned individuals to bring wide-spread institutional non-compliance with anti-sex discrimination legislation and regulations to OCR's attention in those instances where the institution is, for whatever reasons, unwilling and/or unable to address and correct the non-compliance on its own initiative; and to assure the existence of a process for continually defining and refining definitions of sex discrimination.

We also believe there are several advantages to a compliance monitoring program based on a routine data collection and reporting system used by OCR and/or program grant agencies and incorporating the success models' criteria, indicators, and components developed in this report. The system would be based on periodic reports involving a limited number of key statistical and descriptive indicators collected for purposes of assessing an institution's progress in facilitating equal opportunities for women's success as applicants to and students in the school and for purposes of serving as potential "problem alert" flags to trigger possible needs for closer and/or more frequent off-site and/or on-site examinations of the institution, its programs, policies, facilities, and so on. The reports, if appropriately designed, might be incorporated into existing reports and documents (e.g., voucher and fund requests) or regular and simple telephone contacts.

A compliance monitoring system based on the models presented in this report has several prime advantages. First, the reporting system itself would serve as a set of guidelines and useful, educative materials for schools to use in understanding and assessing the impact of their operations, policies, and institutional behaviors on women applicants and students. Specification of the information schools would need to collect and analyze for reporting would provide schools with new information and/or with information in a form which many do not now keep or use. Second, it would provide schools with new techniques for collecting important information and, in some cases, with new communication mechanisms in the institution. For example, techniques for regularly obtaining information from students about their experiences in admissions and training would represent a new management and leadership tool for many institutions' chief administrators. Finally, a compliance monitoring system assumes by its very design that an institution is operating in good faith. By utilizing a limited number of indicators as descriptive of an entire program or range of operations, such a system presumes that, most often, an institution is monitoring its own activities and utilizing the information it has at its disposal to inform management decisions and modify programs and policies in the direction of increased compliance with both the letter and the spirit of whatever legislation and regulations are at issue--in this case, regulations prohibiting sex discrimination in admissions and treatment of students.

Ultimately, we believe that the most effective approach to eliminating sex discrimination as presently legally-defined and as we have defined it in this report will depend on the good faith efforts of the MODVOPPP schools--their chief administrators, faculty members, and male students--to maximize women's opportunities for success and minimize the very complex barriers women currently encounter in obtaining access to the resources they need for success. The very complexity and pervasiveness of those barriers suggest that a complaint and enforcement approach to eliminating sex-discrimination can never be fully effective because it is too slow, too occasional, and provides no incentives or assistance to schools in moving forward on their own initiative. By contrast, an appropriately designed monitoring system can provide both incentives and assistance in many cases. In those institutions where it cannot, the complaint/investigation/enforcement system is still useful and available.

IMPLICATIONS AND RECOMMENDATIONS FOR HEALTH MANPOWER LEGISLATION AND STUDENT FINANCIAL AID

The federal government has been involved in direct support of MODVOPPP health professional education since the end of World War II, and the passage of the Comprehensive Health Manpower Training Act in 1971 (CHMTA) significantly expanded its role. One of CHMTA's key objectives was to address what was then widely considered to be a critical shortage of health manpower by increasing the supply of MODVOPPP professionals to serve the nation's health care needs. The legislation included several provisions to accomplish this objective. Funds were made available to MODVOPPP schools for capital expansion financing. Capitation (or per student) grants were made available to MODVOPPP schools to support their operating costs with capitation bonuses given for a certain percentage increase in first year enrollments each year. Special incentive and program grants were available to schools to develop innovative programs such as three year curricula to accelerate the training process and also to recruit minority, low-income, and other groups typically under-represented in the MODVOPPP professions. Student loan and grant/scholarship funds were made available to support students' MODVOPPP professional educations. And it was this legislation which for the first time prohibited discrimination against students on the basis of sex.

CHMTA's objective of increasing the supply of health manpower appears to have been met. In medicine alone, from 1969 to 1975, there was a 57% increase in student enrollments, and between 1971 and 1975 those enrollments represented over 13,000 new positions. Between 1970 and 1973, 12 new medical schools were opened and all of the other MODVOPPP professions had either opened new schools or had plans in progress to do so. Women in particular seem to have benefited from many of the CHMTA provisions. For example, women represented fully 43% of the increase in medical school enrollments between 1971 and 1975 and, to varying degrees, they were significantly represented in the increased enrollments in the other MODVOPPP professional schools. The coincidence in time of the wide-spread dissemination of the ideas of the women's movement with the anti-sex discrimination provisions of the CHMTA legislation on the one hand, and the desire of the MODVOPPP schools to fill their new first year places with the best available talent on the other seems to have converged to create a situation where more women began applying to MODVOPPP schools and the schools increasingly began to accept them.

CHMTA expired in 1975 and since that time MODVOPPP schools have been funded by continuing resolutions while congressional and administrative policy-makers have sought agreement on a new set of health manpower provisions and programs. Both congressional and administration legislative proposals reflect agreement that the supply of MODVOPPP health professionals is no longer the pressing issue it was several years ago and that the primary problems which any new legislation must address are the geographic and specialty maldistributions of available physicians (and, to an increasing extent, of dentists). MODVOPPP health professionals are over-concentrated in metropolitan urban centers and suburbs and badly under-represented in rural and inner city areas. For example, the national physician/population ratio in urban areas is 170 to 100,000. The ratio for non-urban areas is 80 to 100,000. Similarly, in Chicago in 1970, suburban areas had 123 physicians per 100,000 population while the inner city had only 75 physicians per 100,000 population. The same maldistribution problem exists in the other MODVOPPP professions as well.

Specialty maldistribution poses an equally serious problem--or, more precisely--the problem is one of an increasing shortage of primary care practitioners (including general or family practice, internal medicine, pediatrics, and OB/GYN) with attendant fragmentation of care and overemphasis on highly technical and surgical specialties. In 1970, for example, only three states--Arizona, Iowa, and Maine--had the family practitioner to population ratio of 1/2500 considered adequate by the American Academy of Family Physicians. And in 1972, while pre-paid group health plans typically staffed their programs with 69% primary care practitioners, only 47% of all practicing physicians were in primary care specialties and only 37% of residents in training were in primary care specialties.

While Congress and the Administration currently disagree on the level and scope of new health manpower legislation, they do agree that addressing the geographic and specialty maldistribution problems should be the primary focus of future health manpower legislation. Programmatically, most recent proposals for new manpower legislation have included some form of the following provisions. First, capitation grants to the schools, formerly tied to yearly enrollment increases, would be available contingent upon (1) the schools guaranteeing on a timetable basis that an increasing percentage of the schools' incoming students will commit at the time of enrollment to practice in underserved (rural or inner city) areas upon completion of training and (2) that an increasing percentage of the schools' postgraduate training programs will be in primary care specialties. Second, student loans would include forgiveness provisions based on a year-for-year exchange of service in underserved (rural or inner city) areas through the National Health Service Corps, the military, or under the Health Service Scholarship program. Third, special project funds and contracts would be available to schools to encourage the establishment of a variety of clinical remote-site training programs in underserved areas away from the central campus. Students would rotate through these programs on an externship basis. Funds would also be available to expand the Area Health Education Center (AHEC) programs initiated under the 1971 CHMTA legislation. These programs are established by schools in community medical facilities in isolated areas to provide both medical care and continuing medical education in the area. An expansion of the number of AHECs and of their purpose is envisioned as a means to address the geographic maldistribution problem by more fully utilizing AHECs in the professional training process. Finally, special funds to encourage the creation of more departments of family medicine and more family medicine residencies would also be available to medical and osteopathic medical schools.

While all of these proposals in their several variations have as a common purpose the solution of the dual problems of specialty and geographic maldistribution, they may also have several negative although unintended consequences for women. To the extent that some women are less willing and/or able than men to make future geographic commitments as a condition of admissions under the new capitation proposals, these proposals may work against women in the admissions process. Similarly, financial aid would be less available to women or available on less favorable terms--that is, without the same access to forgiveness provisions as more mobile males would have. Remote site training requirements may also pose hardships for the married woman student and, in particular, the woman student who is a parent as well. Additional problems for women posed by the remote site training proposals involve the reduced control that the schools typically have over such sites in assuring adequate facilities for and equal treatment of women. Women's problems with direct expressions of discriminatory attitudes and behaviors in clinical training settings not directly under the administrative control of the MODVOPPP schools are typically more frequent and more intense. Proposals which encourage the expansion of off-campus clinical training may inadvertantly exacerbate these already prevalent problems.

In our judgement, these potential negative consequences of some of the new health manpower proposals as well as other problems we have mentioned throughout this report regarding the negative impact of federal financial aid policies on women argue that several immediate tasks should be undertaken to assess the extent of the impact and examine alternative policies where possible. Our recommendations include the following

1) Research on negative impact of federal financial aid policies on women.

Research is needed to determine what proportion of women applicants and students are deterred or would be deterred from pursuing MODVOPPP professional training and/or accepting various forms of financial aid by the various requirements for geographic service commitments. Our study suggests this is a problem, but it was not designed to document how extensive or severe the problem is. Such research must also address the related issue of comparative debt levels men and women MODVOPPP students carry upon completion of their training. Forgiveness provisions, if less accessible to women, have a doubly heavy impact if women are also more dependent on federal financial aid because parents, spouses, and/or private banks are unwilling or unavailable to assist them financially.

2) Financial aid policy: alternative of geographic service or primary care specialty choice commitment.

Alternatives should be examined to the various legislative and administrative current financial aid requirements which we have suggested may be unduly restrictive for women. For example, in medicine and osteopathic medicine, capitation and student loan funds might be conditioned upon either geographic service commitments or primary care specialty selection commitments. If feasible, the flexibility involved in an optional approach would be beneficial to all students and particularly to women who need such flexibility to help negotiate the often rigid incompatibilities between MODVOPPP careers and traditional social roles. In addition, such an approach is responsive to women since both available statistics and the reports of women we interviewed in this study suggest that they favor primary care specialties and, as is widely known, typically do not seek surgical specialties which are, at present, over-saturated (23.4% of all active male physicians in 1971 as compared to only 3.8% of all active women physicians were in surgical specialties.)

3) Financial aid policy: students select own service site.

Geographic service programs permitting students to select their own service site rather than being assigned by the needs of the funding and sponsoring agencies and programs should be allowed. Such a provision would go further than current provisions which allow a student to express a service site preference but make no assignment guaranttes. Permitting students to select their own site would admittedly be more difficult to administer but might have the offsetting and compensating advantage of providing an incentive for MODVOPPP professionals to remain in the area they have chosen once they have completed their loan forgiveness service obligations.

4) Financial aid policy: students make service commitments upon graduation.

The feasibility of permitting students to make geographic service commitments upon graduation rather than at time of enrollment for purposes of capitation funding should also be explored. Again, while administratively and fiscally more difficult, such provisions would be more responsibe to all students, but to women in particular, by requiring the commitment at a time when the student has a more realistic view of what is possible in his/her life for the next several years.

5) Financial aid policy: full-time equivalent student and part-time student eligible for capitation funding.

The restrictions on women's participation in MODVOPPP training posed by full-time student status requirements for capitation funding and receipt of student loands and scholarships should be fully examined, and the alternative we suggested earlier of the administrative device of a full-time equivalent student as the basis for capitation funding should be seriously considered. Part-time students would admittedly slow the production of MODVOPPP manpower for the first several years that part-time programs were in operation. However, once the first training cycle is completed, the same numbers of MODVOPPP graduates would still be produced as under a full-time program. Part-time status would have the very strong advantage of providing many more women with access to MODVOPPP professional training by creating opportunities for the married woman parent to become a MODVOPPP student.

IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH, POLICY, AND PROGRAM EFFORTS

Throughout this report--and particularly in the last chapter outlining test strategies for the success models and in this chapter in our discussions of the implications of the study's findings for anti-discrimination enforcement and health manpower legislation--we have suggested research, policy, and programmatic activities which should be conducted by appropriate HEW agencies, MODVOPPP professional and educational associations, and the schools to eliminate barriers to women's access to the MODVOPPP health professions and to help encourage their opportunities for success as applicants and students. Our concerns here are to suggest criteria which might guide the Women's Action Program and other appropriate HEW agencies and MODVOPPP professional and educational associations and schools to set priorities for their future research, policy, and programmatic activities; to propose a system or set of structures for coordinating future research activities; to briefly suggest specific research, policy, and programmatic needs in each step of the professional training sequence; and finally to suggest some special activities designed to minimize the impact that stereotypes about women have in limiting their opportunities for full success in the MODVOPPP professions.

Recommendation: Criteria for Future Research, Policy, and Programmatic Activities

One consequence of the women's movement which has become highly evident to even the most superficial observer in the past several years is a rapidly growing interest in women as a subject for research and study. Academicians, journalists, feminists, and federal, state, and local policy-makers have all been responsible for and/or have participated in sponsoring, conducting, and seeking support for studies of women as children, adults, workers, mothers, and as biological, social, emotional, and psychological entities. Sex role research and studies of socialization and female/male identity formation have proliferated in an effort to understand just how the process of creating social men and women with all of their learned differences occurs. Our exposure to and familiarity with current research on women in general and on women in the MODVOPPP health professions in particular has led us to conclude that the main research problem which the Women's Action Program and other federal agencies must address is not so much an absence of research on women but a research explosion--or, more specifically, how to manage the recent and rapid proliferation in topics and issues of study interest and concern.

Much of the research on women which is currently in process or is proposed is vital and necessary "state of the art" research--that is, it is typically conducted in academic centers and has as its primary purpose an increase in basic knowledge. Some of the same research also has useful indirect--and in some instances direct--implications for public and private institutional policies and programs. Both types of research are needed; and, given the Women's Action Program's responsibilities as a federal policy agency, we suggest that WAP should consider and use the following criteria in assessing and deciding what future research it should support, encourage, and conduct. These same criteria have guided our own choices of certain research suggestions made later in this chapter.

1) Policy-Oriented. Research supported and conducted by the Women's Action Program should have immediate and direct policy and program implications for high priority issues regarding women--most notably, for example, for anti-sex discrimination enforcement and affirmative action planning and for health manpower planning and health care delivery. So, for example, further studies and surveys of MODVOPPP schools and teaching hospitals, clinics, and preceptorships with inadequate and/or segregated physical facilities which limit women's learning opportunities would be a useful and necessary basis for determining the extent of this problem and the time and cost to satisfactorily correct it. Physician inactivity studies would similarly be useful in providing some of the planning information necessary to determine the most effective and efficient means for preventing professional inactivity and/or returning inactive men and women MODVOPPP professionals to active practice.

2) Pilot and Demonstration Program Research. Applied research findings and results are typically maximized in pilot demonstration program efforts which include a carefully planned research component designed to evaluate the operations and consequences of the effort. We believe that at this point sufficient basic research has been conducted in a number of areas to permit the construction and test of pilot efforts and that evaluations of such efforts would be more productive and fruitful than further basic research. For example, this

study and many others have indicated the numerous ways in preprofessional schools in which women are actively discouraged--or at least not encouraged--to seek MODVOPPP health careers. At this point a quantitative survey designed to describe the extent of that problem and to carefully identify the contributions various groups make to it (teachers, administrators, counsellors, and so on) would be a next useful research step. Alternately, the recruiting model proposed in the last chapter might be implemented on a pilot basis and evaluated for effectiveness in increasing women's applications to MODVOPPP health professions schools. We believe the findings from a model test would have more utility for federal policy and programs on an immediate basis, and thus the pilot alternative would be preferable to the survey.

3) Test, Evaluate Alternatives to Key Resources. Programs and policies designed to facilitate women's access to the key resources needed for success as MODVOPPP applicants and students should be prime topics for future research. Similarly, efforts to design, implement, and evaluate the effectiveness of alternatives and interventions which minimize the importance of certain of these resources should be high priority efforts--for example, implementation and evaluation of formal, institutional systems designed to supplement information available through pass/fail grading systems and thus reduce dependency on the informal network.

4) Continue Previous Work. Research which replicates or continues prior research and thus establishes and/or documents trends which have important policy implications should be viewed as high priority. For example, continuing studies of student and practitioner attrition and, particularly, the reasons for attrition are essential sources of information identifying trends of which federal, association, and school policy-makers and decision-makers should be aware.

5) Utilize Existing Data. Several federal agencies as well as the MODVOPPP professional and educational associations possess a substantial amount of information about MODVOPPP students and practitioners (and, as noted in Appendix F, Data Gaps, many unfortunately do not) which is useful for research but often not in the form in which it is normally published and/or aggregated and analyzed by the agency in question. (For example, we presume that the

HEW Health Resources Administration's data on MODVOPPP student debts which form the basis for several of the Tables in Appendix G could be made available by sex although it is not now published that way.) Whenever possible, future research on the MODVOPPP professions and on women in the MODVOPPP professions should be based on and utilize this data, and special and specific procedures, agreements, and funds should be arranged with the appropriate federal and MODVOPPP agencies to maximize use of their existing data banks.

6) Use Existing Organizational Contacts. MODVOPPP professional and educational associations are ideal organizations to sponsor or at least participate in joint ventures sponsoring research of certain kinds because of their contacts and influence with the MODVOPPP schools. Demonstration programs and research efforts with a substantial component for disseminating findings are examples of such efforts.

7) Use Women's Organizations. Whenever possible, women's organizations should conduct and/or participate in joint-venture research efforts and pilot demonstration programs in the MODVOPPP professions. This is particularly important in these professions for several reasons. First, it is one more mechanism by which women can become more visible, gain broader experience in a full range of professional affairs, and serve as role models for women students. Second, research grants and contracts can help independent women's professional organizations to establish an economic base and staff support as such funds now assist the major professional and educational associations to support their activities. Third, women in the MODVOPPP professions can help identify the issues which pose problems for women's success based on their own experiences. They can therefore provide a perspective and focus on concerns which might otherwise be missed.

Recommendation: Coordinating Structure(s) for Future Research

The recent proliferation in research on women in general and women in the MODVOPPP health professions in particular is potentially advantageous to the Women's Action Program and other federal, MODVOPPP professional, and academic agencies and individuals interested in and/or dependent on such research for their planning and decision-making. Federal agencies and professional and educational associations particularly stand to benefit if they can utilize on-going research to inform and guide policy without funding duplicate or parallel efforts. However, the enormous amount of research and research interest in women which exists at present makes it difficult to stay current on what is being done, where, by whom, under whose auspices, for what purpose, and when the research will be complete and findings available. Even in limited areas--for example, women in medicine or women in dentistry--current familiarity with interesting, pertinent, and on-going research is problematic. Thus while the potential for benefit from current research activity is immense, actual ability to realize that benefit is, at present, limited. For these reasons we suggest that the use of federal funds for some form of research coordinating structure(s) might be a particularly cost-effective investment in realizing maximum benefit from research sponsored by federal agencies, MODVOPPP professional and educational agencies and schools, private interest groups, universities and colleges, individual researchers, and others. Several alternative mechanisms or structures might be possible.

Grants or contracts might be awarded to existing major national women's organizations to identify, summarize, and share information about research being conducted within defined areas of interest. For example, the American Medical Women's Association might be responsible for cataloguing, annotating, and keeping track of the progress of research on women in medicine. A federal inter-departmental or inter-agency task force of women's agencies (for example, the Women's Action Program, the Department of Labor's Women's Bureau, etc.) might be established and staffed to perform this cataloguing and annotating function on a broader basis including as much research activity as it can identify and locate. A national advisory committee on women's research might be created and staffed to keep track of current research and advise federal women's agencies of current and proposed research efforts as well as suggesting priority needed research. Or, similarly, a national research coordinating center might be established to both identify, summarize, and catalogue existing research and also to support and fund new and/or ongoing research. Depending on its mandate, such a center might also be responsible for the support and/or creation of campus centers for women's studies to draw together currently fragmented research at universities and colleges; it might support individual dissertations and other research with small, limited grants in those instances where the research is centered on potentially important federal policy or program issues; it might support some long-term research which may not have immediate or direct policy implications but which is ultimately essential to a more refined understanding of the social forces and institutions which help perpetuate forms of discrimination and prejudice against women. For example, such research might include studies of written and electronic media portrayals of women which create and/or reinforce negative and/or out-moded stereotypes. Finally, and of critical importance, these structures for monitoring and sharing information about current research on women might review proposed federal legislation and regulations affecting women on the basis of findings from current and recent research. Such reviews would provide useful assistance to the federal women's agencies with formal legislative review responsibilities.

Recommendation: Research, Policy, and Programmatic Activities/The Professional Training Sequence

This section includes recommendations for research as well as for policy and programmatic efforts. Most are recommendations which require or involve federal support; some, however, may be implemented by MODVOPPP professional and educational associations and schools without federal participation and as good faith indications of the professions' and schools' commitment to encouraging women's success as MODVOPPP applicants and students. Recommendations which we have suggested as high priority concerns either meet most of the research criteria suggested earlier, or they are included because they can be implemented immediately and/or without any or substantial cost. Priority recommendations are noted with an asterisk [*] for reading convenience. Some of the recommendations included here have already been mentioned in this study as components of the recruitment, admissions, and success models. Mentioning them again reflects our belief that they are important and/or politically and economically east to implement.

Recruitment

Four major recruitment research and programmatic efforts are suggested by this study's findings as both needed and useful: research on women who self-select out of the MODVOPPP applicant pools; tests and evaluations of effective recruiting programs; technical assistance and education for preprofessional school counsellors, advisors, and teachers; and an education campaign for parents and the general public. We consider all of these efforts as high priority.

1)* Research on women who self-select out of MODVOPPP applicant pools.

Research on women who self-select out of MODVOPPP applicant pools is important to help further identify and refine the reasons and barriers that result in their decisions not to apply. The study group would be women who do not complete application to MODVOPPP schools but who were enrolled in pre-MODVOPPP programs in undergraduate colleges, women who take MODVOPPP professional aptitude tests, and/or women who start but do not finish the application process to MODVOPPP schools. Our study findings based on interviews with women who both completed the application process and were accepted to the MODVOPPP schools suggest a variety of reasons why other women might self-select out including: actual or anticipated problems in obtaining sufficient financial aid; concerns about combining personal, perhaps familial interests and roles with professional careers; anxieties about the length, stress, and/or cost of training; anxieties about the social and personal isolation they would experience in a predominantly male profession; insufficient and/or inaccurate information about the profession and its practice opportunities and current members; active discouragement by family members, family practitioners, school personnel and others; and so on. Information from such a study would be an important basis for reviewing and evaluating current and proposed recruiting strategies; Title IX compliance in preprofessional schools; and federal policies regarding provision of student financial aid.

2)* Women's recruitment grants to MODVOPPP schools and associations including evaluations of effectiveness.

A program of women's recruitment grants to MODVOPPP schools and associations--grants not unlike those provided for minority recruitment through the 1971 Comprehensive Health Manpower Act--should be made available to at least those of the smaller and less visible MODVOPPP professions whose proportions of women applicants and first year students, while increasing, are still small. Special recruitment efforts in the smaller less visible professions are particularly important since women are less likely to know about these professions and their opportunities through formal, typically preprofessional school information channels and through access to these professions' informal networks. Special attention should be given to evaluating the effectiveness of various types of materials' formats, content, and other components of the recruitment efforts since successfully recruiting women to professions may depend on unique approaches which are not required in other kinds of recruiting efforts.

3)* Educational program for preprofessional school counsellors and teachers including revision of current vocational materials.

A concentrated, coordinated, and wide-spread education program for preprofessional school counsellors and teachers advising them of the critical and pivotal role they frequently play in discouraging young women to aspire to professional careers in general and to MODVOPPP careers in particular is strongly suggested by this study's findings. Almost all of the women we interviewed in this study cited some examples of preprofessional school personnel who had discouraged them in their MODVOPPP career interests. Thus we must assume even greater discouragements are faced by many women who are not among the students currently enrolled in MODVOPPP schools. Such a program might be based on and conducted through a series of special articles and materials prepared for teachers' and counsellors' associations' journals and newsletters; workshops, lectures, and special presentations at annual association meetings; and specially-prepared, high-impact films and/or other audio-visual aids which illustrate rather than talk about the many, often subtle, ways in which teachers and counsellors treat women students differently than men thus dampening their enthusiasm and interest in pursuing careers and coursework not traditionally considered "suitable for a girl". Utilizing the same communication channels and media (associations, newsletters, etc.), this program should also include positive technical assistance and materials for preprofessional school counsellors, advisors, and teachers to help them modify their attitudes and behaviors in supportive directions for young women interested in MODVOPPP and other professional careers. This program should include and be coupled with substantial efforts to revise vocational interest materials and tests and all other written and audio-visual brochures, publications, and information sources which are used by pre-professional school personnel to inform and advise students about future career options and opportunities.

4)* Public education program regarding women in the MODVOPPP professions and using the popular media.

Finally, a program aimed at changing general public and parental attitudes and expectations about appropriate and possible opportunities for women in MODVOPPP professional careers is needed in the long run to neutralize these as sources of discouragement and, if possible, make them the sources of encouragement which they presently are for young men. The media--advertising, television, movies, magazines, and other popular media sources--need to portray women as natural, frequent, and able members of the MODVOPPP professions to help create this change. Professional associations are perhaps in the best position to influence the media in this direction. However, television and radio public service announcements by federal women's agencies and by private women's groups might also be a good beginning.

Admissions

Four principle admissions research and programmatic efforts are suggested by the study's findings as important: regular, periodic reviews and evaluations of the use, utility, and impartiality of professional aptitude tests; training for admissions' committee members in interviewing techniques; comparative research on MODVOPPP school applicants and students; and research on MODVOPPP school applicants who are not accepted for enrollment. We consider the first two of these four suggestions as high priority.

1)* Periodic reviews, evaluations of professional aptitude tests.

Professional aptitude tests are used in a variety of ways by MODVOPPP schools and, in some cases, not at all. Most of the tests are designed to test academic learning and retention with principal emphasis on the sciences and mathematics. Depending both on their design and use, these tests may provide information which simply duplicates that provided by grade point averages while at the same time screening women (and minority) candidates more severely than the validity of the tests, their relationship to professional practice competence and success, and/or differences in scores might warrant. We find it significant, for example, that the majority of schools in veterinary medicine do not use the Veterinary Aptitude Test because they believe it only duplicates GPA information and is not predictive of clinical performance or success. Yet veterinary medicine also has the highest applicant to student ratio of any of the MODVOPPP professions. For these reasons we suggest that the MODVOPPP professional and educational associations should take the lead in periodically and carefully evaluating the validity and use of their professional aptitude tests for biases and/or discriminatory use by the schools. Alternatives to use of the tests should also be sought and examined.

2)* Pilot demonstration programs, training, and technical assistance for admissions committee members including evaluation of impact on candidates selected for admission.

Pilot demonstration programs and technical assistance and training workshops, manuals, audio-visual materials, and other aids should be developed and implemented to train MODVOPPP admissions committee members in sensitive and careful interviewing techniques and skills. These efforts should include a systematic evaluation component to determine whether such training has any definable impact on the characteristics of candidates admitted for enrollment.

3) Annual comparative research on MODVOPPP school applicants, students.

Research comparing the demographic and performance characteristics of MODVOPPP applicants and accepted students by sex should be conducted and published annually. Publication should include similar research from prior years to permit easy analysis of changes and trends. MODVOPPP professional and educational associations should take responsibility for this effort since they have best access to the applicant and student data.

4) Comparative research on accepted, non-accepted MODVOPPP applicants.

Research should be conducted comparing accepted and rejected MODVOPPP applicants by sex to determine: whether accepted or rejected applicants demonstrate significantly different demographic and performance characteristics and whether they display or express different practice interests and objectives; whether rejected men and women applicants receive different follow-up counselling advice as some studies in medicine have suggested (with men more likely to be encouraged to re-apply or pursue training in foreign medical schools and women more likely to be counselled to seek careers in the allied health professions) and whether they in fact follow different career paths after rejection. Such research would be useful in identifying systematic biases and patterns in admissions processes which may be dysfunctional given the kinds of students accepted and their career interests. It would also be valuable in identifying further possible tracking patterns influencing women out of the MODVOPPP health professions and, as a result, in identifying both forms of discriminatory treatment and potential change intervention points.

Preclinical/Clinical Training

Eighteen major research and programmatic efforts related to preclinical/clinical training are considered important suggestions which reflect this study's findings. They cluster into four groups: affirmative action (three items); curriculum (eight items); programs, services, and facilities (four items); and special studies (three items). Of the eighteen suggested research and/or programmtic efforts, we consider fourteen high priority and note those in the discussion below.

A. Affirmative Action

As we noted in the Introduction to this report, this study has not been directly concerned with women faculty members in the MODVOPPP schools nor with affirmative action efforts designed to address women's employment opportunities and problems. However, the role and status of women faculty members in the MODVOPPP schools are important issues for several reasons. Women faculty members are an important source of role models for women students. They help break the heavy male sex-typing which deters some women from considering the MODVOPPP professions and/or individual schools. In medicine in particular, teaching is a major career track for many women. And in a number of the schools we visited in this study, women faculty members were key and instrumental in suggesting and initiating some of the programmatic and policy components in the recruitment, admissions, and educational systems which we suggest are associated with increased opportunities for women's success as applicants and students. Thus we believe three related affirmative action research efforts would be useful, and we consider all of them as high priority.

1)* Study and analysis of faculty and administrative positions in MODVOPPP schools including affirmative action planning training and technical assistance materials for schools.

A study and analysis of faculty and administrative positions in MODVOPPP schools should be conducted to (1) identify those which are high visibility positions and would thus have major importance and impact if targeted as high priority positions for women (and minorities) in affirmative action plans and (2) assess the effect on women (and minority) students in schools which have made a successful effort to place women in high visibility positions. The results of the study should be incorporated into a set of training and technical assistance materials made available to the schools and designed to assist them in developing more sensitive and effective affirmative action plans and planning techniques. Thus the materials should include, for example, guidance and instruction on methods for conducting an institutional self-evaluation and analysis intended to identify high visibility positions.

2)* Research and technical assistance materials to identify institutional mechanisms which discriminate against women faculty in employment.

Research and technical assistance materials are needed to identify and catalogue the various institutional mechanisms which appear to discriminate against women faculty members in their employment opportunities and security--for example, over-use of acting rather than permanent appointments, more frequent use of "soft" (federal grant) funds for salaries, and so on. The purpose of the research and the technical assistance materials would be to provide MODVOPPP schools and their affirmative action officers with information useful in assisting self-evaluation and affirmative action planning efforts, and to advise department chairs about the approaches to hiring and promotions which may be considered suspect when those approaches form consistent patterns.

3)* Profession-wide studies of MODVOPPP women faculty employment patterns.

Profession-wide systematic studies of MODVOPPP women faculty employment patterns (including geographic and professional mobility) are needed to establish the extent to which women's professional growth opportunities are limited by reduced access to informal recruiting and referral networks and by assumptions about their geographic mobility. For example, faculty women we interviewed often spoke of job offers which were considered but ultimately never extended to women in other institutions around the country because department chairs and search committees assumed the women would not or could not relocate. Similarly, male faculty members and administrators we interviewed often expressed a desire to recruit more women faculty but rarely thought to utilize women's organizations and emerging informal networks for that purpose. A study of recruitment and promotion practices would be a useful source of technical assistance to MODVOPPP school administrators and department chairs in assisting them to improve their recruiting efforts and the supply of women faculty candidates from which they can draw.

B. Curriculum

Eight studies and/or research and demonstration efforts in curriculum structure and content are suggested here. In most instances, the research topics involved represent components in the education success model, so proposals to test the success models already include some of this research. The first five of the following suggestions represent those we consider of highest priority.

1)* Pilot programs to assess utility, impact on women's experiences of specifying clinical training objectives, criteria for evaluating student performance.

We suggest that a pilot program or programs be conducted to assess various methods for, and the feasibility of, specifying clinical training objectives and criteria for evaluating student performance in clinical skills and behaviors. Findings should be disseminated among all of the MODVOPPP professional schools which include clinical training in their curricula. This effort should include a component designed to evaluate the impact of specific, written objectives on women's experiences and performance in clinical training settings.

2)* Pilot programs to test, evaluate sex-blind examinations.

Pilot programs to design, test, and evaluate the impact of a series of different types of sex-blind examinations should be funded and carried out in the MODVOPPP professional schools. The MODVOPPP professional and educational associations should disseminate the results of successful and workable systems among the schools and should also encourage their use.

3)* Test and evaluation of systems for student review of faculty evaluations of student performance.

Various systems for student review of faculty evaluations of their work should be tested and evaluated, and these should include a component involving student evaluations of faculty performance as teachers and as clinician role models. Again, successful and workable systems should be widely publicized in the MODVOPPP schools by the professional and educational associations, and their use should be strongly encouraged.

4)* Pilot systems to monitor women's experiences in off-site clinical training settings not administered by the schools.

Various pilot systems for monitoring women's experiences and treatment in clinical training settings not under the direct administrative control of the MODVOPPP schools should be designed and tested and their results disseminated among the schools. This effort should include a component evaluating whether the monitoring system itself creates any noticeable change in the treatment women encounter in the clinical training institution or setting. It should also include a component to assess the manner in which MODVOPPP schools use any information they receive regarding discriminatory treatment against women at specified training sites.

5)* Research and demonstration programs to design, test programmed learning materials, independent study.

Research and demonstration programs to design and test MODVOPPP curricula based heavily on programmed learning materials and independent study should be supported. Programmed learning materials and independent study by definition provide a student with some of the flexibility we have suggested is especially important for women and therefore might enable many more women to consider MODVOPPP professional careers. Use of these techniques in MODVOPPP professional training--techniques which may be most easily applied in preclinical courses--might also contribute to retraining and/or continuing education programs for inactive as well as active practitioners.

6) Research to assess pass/fail grading including design and test of alternative student performance information systems.

Research assessing the impact of pass/fail grading systems on students' work cooperation/competitiveness may be useful to the extent that teamwork is increasingly needed as the basis for delivering adequate health care in institutional settings. Of particular importance for women is research designed to determine whether, in fact, pass/fail grading systems do work to their disadvantage by causing administrators in graduate training institutions and future employers and associates to rely more heavily on the informal professional networks for information than they might otherwise. Assuming this hypothesis is correct, as proposed earlier, this research should also include designs and tests of alternative information systems established to supplement the informal network.

7) Research to assess three versus four year curricula.

We suggest that research on the professional training and socialization effectiveness of three versus four year curricula is needed. We believe that the three year curriculum is advantageous to women if offered as an option among other alternatives. However, some of our study respondents have suggested several disadvantages to the three year program which bear more heavily on women. Specifically, some respondents suggested that a greater financial burden is placed on students in a three year program because they must generate the same tuition and fees over a shorter time period and do not have summers available to them to work. Additionally, some have suggested that the shorter training program does not permit adequate time for students to observe and absorb the appropriate professional behaviors and personal trait characteristics of the practicing MODVOPPP professional. Research designed to test these hypotheses would provide federal, professional, and school policy and decision-makers with important additional information regarding the desirability of continuing to stress and/or experiment with three year curricula.

8) Grants to MODVOPPP schools and/or associations to incorporate non-science requirements and electives in curricula.

We believe that grants providing the MODVOPPP schools and/or associations with an opportunity to develop and experiment with a broad range of non-science required and elective courses are warranted by the range of responsibilities and skills MODVOPPP practitioners must assume for which they often receive little or no academic preparation. Courses in the social sciences, business management, and the organization, economics, and politics of health care delivery should be primary targets for such an effort. Since many of the MODVOPPP schools--particularly those in the smaller professions--are free-standing and do not enjoy the resources and advantages of university affiliation which would be useful in this kind of effort, alternative systems might be explored including: cooperative arrangements with universities in the immediate geographic area to develop and/or offer such courses; grants to the professional and/or educational associations to develop curricula which all of their professional schools could use; and in some instances revisions of prerequisite course entry requirements to include courses the MODVOPPP schools do not have adequate resources to offer but which are considered important for students to have taken.

C. Programs, Services, and Facilities

Four suggestions for new or expanded programs, services, and facilities result from the study's findings. The first three are priority recommendations.

1)* Funding to MODVOPPP schools for needed modifications, additions to physical facilities.

We suggest that adequate funds be made available to MODVOPPP schools and cooperating training institutions whose clinical training facilities do not at present encourage or permit full participation of women in all aspects of the clinical learning experience. Specifically, funds should be made available to integrate existing facilities and/or, if needed, to create new facilities which preserve individual modesties while at the same time permitting women access to the informal conversations and discussions which are so essential a part of the clinical training experience.

2)* Educational program for male faculty, clinicians, and practitioners regarding patient acceptance of women practitioners.

A program of technical assistance and training materials, workshops, and/or other appropriate educational vehicles should be developed to educate male faculty members, clinicians, practitioners, and others in the specific ways in which their behaviors support or undermine patient and client willingness to accept women practitioners as competent and authoritative professionals. Indirectly such an effort might also be viewed as a patient education program and, in the long run, would be an effective means for eroding those stereotypes about women which at present act to limit their full professional acceptance.

3)* Formal, institutionally-sponsored professional placement systems including evaluations of effectiveness.

Formal, institutionally-sponsored placement systems designed to assist students in locating summer employment and professional practice opportunities upon completion of their training should be instituted and their effectiveness in changing and improving women's placement opportunities evaluated. Since the purpose of instituting formal placement systems is to provide a workable professional referral alternative to the informal collegial network, the operations and results of successful and effective programs should be widely disseminated among MODVOPPP schools in each profession.

4) Profession-wide, inter-school student transfer systems.

Consideration should be given to developing in each profession a profession-wide, inter-school student transfer system, perhaps modeled on medicine's foreign medical school student transfer system (COTRANS). We encountered several examples of women students in various of the MODVOPPP professions who had either found it necessary to discontinue their studies at some point in the past and/or were faced with that prospect when we met them due to their husbands' business relocations. Since married women often must relocate to accommodate their husbands' careers, a transfer system would be a useful support to help them continue their studies without interruption.

D. Special Studies

We recommend three special studies for future research. All are high priority.

1)* Frequent, periodic student attrition studies in preclinical/clinical training.

As we have repeatedly suggested in this report, continuing studies of student attrition in every MODVOPPP profession are essential and must be conducted in order to better understand the reasons men and women drop out of professional training and, in particular, the reasons for any differences in attrition. They are important in helping to identify those institutional features which result in differential attrition rates for both sexes, and above all, they should be conducted on a continuing basis to establish and verify trends and changes.

2)* Studies of significant factors in men's, women's specialty choice.

More study should be devoted to the process by which men and women choose to specialize and to the choices they make in those professions where specialty choice is an issue. The process of considering and choosing among various specialties is, in some respects, quite similar to the process involving initial consideration and selection of a MODVOPPP profession, although "recruitment" and "admissions" are generally much more informal. It is in the informal aspects of specialty "selection/recruitment/admissions" that we believe discrimination occurs and constitutes much of the basis for the highly differential patterns of specialty choice in evidence among men and women in medicine and, to a certain extent, in dentistry as well. That is, this study's findings suggest that women are less often personally encouraged and more actively discouraged by faculty members and clinicians in considering certain specialties. Women's reports of their experiences in different clinical clerkships also suggest that in some they feel more accepted and welcome than in others. Further study designed to more carefully document and explore the significant factors in specialty choice would thus be useful.

3)* Longitudinal studies of male/female approaches to patient care, impact of training on student professional interests and objectives.

Our study suggests but cannot document the existence or extent of certain differences between men and women students in their professional practice interests and approach to patient care. Both men and women students seem to share an interest in various forms of group and institutional practice, and both seem concerned with reintroducing into professional practice a concern with and sensitivity to patients which they feel most active practitioners in their profession do not display. However, it is our impression that women even more than men desire practice opportunities in institutional settings which provide them with the personal flexibilities that accommodate dual roles as wives/mothers and professionals, and that the opportunity to work with and help patients is a more wide-spread and significant motivation for them in entering the MODVOPPP professions. These observations should be tested with further study--particularly through longitudinal studies designed to determine if the professional training process itself changes women's professional interests and objectives--since the differences we observe between men and women, if real, may have profound impact on the quality and manner in which health care is delivered in the future as increasing numbers of women enter the MODVOPPP professions.

Postgraduate Training

Three related research efforts involving postgraduate training are strongly indicated as high priority for future studies. These research needs are principally relevant to medicine and osteopathic medicine although they may have important implications for the other MODVOPPP professions which have recently begun to emphasize postgraduate specialty training--most notably dentistry, veterinary medicine, and podiatry.

1)* Frequent, periodic attrition studies in postgraduate training.

Continuing studies of attrition in postgraduate training are needed to parallel the attrition studies suggested for the preclinical/clinical stage of the professional training sequence. Studies comparing differences, if any, in men's and women's attrition rates, timing, and reasons are necessary to provide information on which federal and professional decision-makers can base policies and programs designed to minimize postgraduate drop-outs. Many of this study's respondents suggested that women's attrition is greatest during the postgraduate training years due to the pressures and stress experienced in starting families at this time while trying to maintain on-call schedules of sixty or more hours per week. We have no statistical data to substantiate these observations, but if they are correct, the implications for the structure and organization of intern and residency training programs are profound if maximum retention of postgraduate students is a professional and federal objective. In particular, this would strongly argue for more wide-spread use and availability of various forms of part-time and flexible internships and residencies which help individuals accommodate dual family and professional roles.

2)* Research on women's needs for, interest in part-time and flexible postgraduate training programs.

Our study suggests that at present very few part-time and flexible medical internships and residencies are available, and they are not widely publicized nor are they a formal part of the medical profession's computerized intern and residency matching system. Those few positions which do exist are typically created and negotiated on a case-by-case basis between an individual intern or resident and the training institution involved. Yet, in those instances where precedent(s) and/or the possibility for creation and negotiation of part-time or flexible positions do exist, it is our understanding that women very often do not take advantage of these opportunities. Some of our respondents have suggested that the causes for this include a reluctance to request "special treatment" and/or a lack of information that flexible programming is even possible. Whatever the reasons, it is apparent that research designed to determine the extent of women's need for and interest in various forms of part-time and flexible postgraduate training programs is essential, and that research would also be designed to determine the conditions under which women would seek and utilize such programs.

3)* Long-term, comprehensive, wide-spread research and demonstration programs to test, evaluate extensive use of part-time and flexible intern and residency programs.

Of greatest importance, we would suggest that a long-term, comprehensive, and wide-spread research and demonstration program designed to test and evaluate the possibilities, costs, advantages, disadvantages, and consequences of extensive use of part-time and flexible intern and residency programs is essential. The attrition and use studies suggested above might be part of or precede this effort, but its conduct should not be conditional on them. In making this recommendation, we are aware that the issue of how best to conduct postgraduate training is and has been the subject of much controversy in the medical profession for some time. Arguments in favor of the current system of long hours, round-the-clock duty, and frequent night and weekend work are persuasive as are the arguments in favor of change. Proponents of the current system argue that the pressures it creates and the personal fatigue which is one of its consequences are a necessary part of training future physicians to function effectively under duress. They argue that continuous and frequent presence in the training hospitals is essential if the resident is to be available when interesting and unusual but unscheduled cases come in. Similarly, the argument is made that the quality of a resident's training would suffer if s/he were only periodically available to discuss and participate in case diagnoses and follow-up. Other arguments against part-time and flexible programs include: the quality of patient care would suffer as a function of multiple and changing house staff responsible for each patients' care; personnel scheduling and communication would be difficult if not impossible; and resentments toward part-time residents by full-time residents would ensue making good working relationships and communication problematic. Finally, and perhaps most important, many argue that a system of part-time or shared positions would not be economically feasible since the current system typically defines full-time as essentially time and a half or double time, thus making the definition of part-time unclear, costly, or both.

However, arguments against the present system of long-hours and stressful training are also increasingly heard. Many argue that physician error must be more common when diagnoses and treatment are performed by individuals fatigued from long hours on duty, and that the general quality of patient care must also suffer. Many opponents of the current system insist that its only rationale is economic; that problems cited regarding the quality of training, of patient care, and of personnel scheduling and communication can be resolved or are not really problems in the first instance; that the resentments which full-time residents would feel toward part-time personnel may only occur in certain kinds of part-time programs; and that what is needed is a program designed to test which forms of part-time and/or flexible residencies minimize or do not create the resentment problem. Finally, the critics of the current postgraduate training system include men and women who believe that flexible and part-time training programs are necessary and desirable because they permit individuals to more reasonably combine personal and professional lives.

It is neither our task nor our competence to attempt to resolve the arguments for and against flexible and part-time postgraduate training programs. However, given the essential importance of flexibility for women in all stages of the professional training sequence, we suggest the issues raised by both opponents and proponents for new forms of postgraduate training should be central topics for a research and demonstration program. Such an effort should be based on a series of tests of different forms of part-time and flexible residencies including; part-day, part-week, alternate weeks or months on/off, and shared positions (that is, two persons sharing one residency, three sharing two, and so on). To assure maximum benefit from such a program, enough positions of each type in each medical specialty should be supported to enable variations in the organizational, political, and economic bases of the sponsoring training institutions to be assessed in terms of their impact on overall effectivenes. The positions should be widely publicized and given substantial official and public support by key professional and institutional administrators to assure that the programs are not viewed in any way as "second-class" training experiences; that women are aware of their existence; and that women are encouraged to participate in them. Finally, the program should operate over a sufficient period of time to enable a realistic appraisal of its impact on women's attrition during postgraduate training and ultimately on their future practice patterns, and activity levels.

Professional Practice

Eight issues involved in professional practice are important concerns for future research and policy. We consider all eight as high priority.

1)* Frequent, periodic studies of professional practice patterns.

Comprehensive, periodic, and frequent studies of men's and women's professional practice patterns, activity levels, and professional involvement should be conducted and their results regularly published and widely disseminated. Such research is essential to identify and document the major influences which affect varying patterns of professional activity and to establish trends and changes. The apparent differences in women's practice patterns, activity levels, and professional involvement are all bases for substantial and frequent criticism against their participation in the MODVOPPP professions. Accurate information verifying the existence, nature, and causes of these differences is important to offset any incorrect impressions, note positive contributions women make in professional practice, and to identify policies and programs in professional practice settings and associations whose implementation and/or modification might facilitate different professional activity patterns for those women who desire them.

2)* Retrospective/exploratory, then systematic survey studies of informal professional network development, of women's participation in networks.

A sequential series of retrospective/exploratory and then systematic survey studies of both active and inactive women practitioners should be conducted to determine: the stage in the professional training sequence where informal professional networks begin to develop, the extent to which women are/were excluded from these networks, and the major factors which influenced their inclusion/exclusion in the early formation of these networks; women's current involvement and participation in informal professional networks--particularly in patient or client referral systems; reasons women are or are not currently involved in active practice; reasons for the types of practice and levels of activity they choose; and reasons women are or are not involved in professional political and association activities. Results of this research coupled with regular, on-going practitioner activity studies should facilitate a more refined understanding of the factors which influence differences in men's and women's professional practice patterns.

3)* A systematic research program to define, evaluate cost and benefits of varying forms of MODVOPPP professional activity.

A systematic cost/benefit research program designed to first define and then evaluate the costs and benefits of varying forms of MODVOPPP professional activity is needed. National concerns with health manpower shortages in absolute terms, in certain medical and dental specialties, and in certain geographic areas suggest that cost/benefit issues involved in the training of MODVOPPP professionals and the social return expected from their practice are complex and continually undergoing redefinition. For example, at the turn of this decade our most pressing health manpower concern was the absolute shortage of MODVOPPP practitioners, and our national health manpower priority was to expand the supply of medical manpower to meet the nation's health care needs. Today supply is less the issue than the specialty and geographic choices practitioners make, and, for example, many would argue that training investments in more suburban surgeons are not cost-effective no matter how many hours per week or weeks of their lives such physicians practice. Given the pervasive concerns expressed by most representatives of the MODVOPPP professions about women's professional inactivity and the insufficient return on training investments they represent, research programs which develop more sophisticated and current definitions of the terms cost and benefit are important. Benefit may need to be defined in more sophisticated and comprehensive ways than it has been in the past--that is, a definition of benefit may need to include more than the number of hours in a week, a year, or a lifetime that a MODVOPPP professional devotes to patient care or some other form of paid professional practice. Other issues needing consideration in a more comprehensive working definition could include: quality of patient care; participation in groups and institutional forms of service delivery; voluntary services or part-time services in care settings which depend on a flexible supply of health professionals; specialty and geographic practice choice; and so on. Practice activity must then be evaluated against new and more comprehensive definitions of benefit for useful cost/benefit assessments of training investments made.

4)* Pilot demonstration projects to compare costs and effectiveness of alternative means for maintaining and/or returning women to professional practice including childcare, domestic help, and training and re-entry programs.

A comprehensive and wide-spread research and demonstration program designed to evaluate the most effective and efficient ways to maximize training investments in women MODVOPPP practitioners should be undertaken. Available data on the inactivity levels of MODVOPPP women does indicate that they are more often inactive and/or more often practice part-time. Many of the research suggestions regarding professional practice made so far are designed to provide better information on the factors which influence women's activity/inactivity. However sufficient data now exists to suggest that the conflict between family and professional responsibilities undoubtedly accounts for a great deal of women's inactivity. Thus a series of pilot demonstration projects aimed at assessing the comparative costs and effectiveness of alternative means for maintaining and/or returning women to professional practice would be useful. Such projects should include childcare and domestic help provisions for women and also retraining and re-entry programs. The advantages and disadvantages of each approach should be the primary topic for investigation in this effort.

5)* Design continuing education programs to include attention to needs of part-time and/or inactive practitioners desiring to return to full-time, active professional involvement.

The rapid proliferation and acceleration of knowledge and new technologies in all of the MODVOPPP professions has placed pressure on the professions to improve and expand the availability of continuing education programs for MODVOPPP practitioners. Research and plans for the design and improvement of continuing education programs should include attention to the needs of the part-time and/or inactive practitioner who desires to return to full-time and/or active professional involvement. In that way, regular on-going continuing education programs can also serve the retraining needs of women practitioners returning to full-time practice after a period of part-time and/or inactive status during which other personal and/or familiar obligations were paramount.

6)* 1970 Carnegie Commission recommendation that student financial aid include forgiveness for women who remain professionally active while mothers. And,

7)* 1970 Carnegie Commission recommendation for a national system of state-by-state licensing reciprocity.

The Carnegie Commission in its 1970 report on the supply of the nation's health manpower made two suggestions regarding women's practice opportunities which we support and believe useful to reiterate here as important policy recommendations. The Commission recommended that student financial aid include forgiveness provisions for women students who agree to remain professionally active after training and during their years of child-bearing and raising. Recognizing the geographic mobility problems which women who follow their spouses' careers must often face, the Commission also urged a national system of state-by-state licensing reciprocity to ease the impact of those moves and minimize disruptions in women's professional practice.

8)* Full tax deductions for childcare and domestic help.

Many social planners, women's groups, and others have suggested that full tax deductions for childcare and domestic help should be given to working women to help defray the costs they incur in being economically productive members of the nation's work force. We believe those suggestions are sound and support them here as major incentives for maintaining women MODVOPPP professionals in active professional status while they also assume familial roles as wives and mothers.

Recommendation: Special Activities to Minimize Stereotypes/Research, Technical Assistance, Films on Stereotypes

Throughout this report we have stressed the limitations imposed by stereotypes about women and their characteristics on women's access to full opportunity for success in the MODVOPPP professions as applicants, students, and practitioners. We have also suggested a variety of ways in which stereotypes have been combatted and their influence minimized including the wide-spread publication and dissemination of information and research findings which contradict stereotypes and incorrect impressions people hold about women. For example, information about women's qualifications as MODVOPPP applicants and about admissions procedures and criteria has successfully been used at some of the schools we visited in this study to off-set the incorrect impressions male students held that admissions standards were lowered in order to admit more women students. Information which indicates that women are increasingly entering the MODVOPPP schools and professions appears to have been useful in breaking down the heavy male sex-typing of the MODVOPPP professions and contributing to the recent increases in woman in MODVOPPP applicant pools.

These findings suggest a need for a systematic future research, technical assistance, and information dissemination program designed to identify common discriminatory myths and stereotypes about women, to define the conditions under which these stereotypes may or may not apply, and to disseminate research findings in order to invalidate the stereotypes as appropriate and neutralize their discriminatory power against women in the MODVOPPP health professions. A critical component of this program should be a series of films, preferably in the cinema verité style, which graphically illustrate the consequences our social assumptions and stereotypes about men and women have for the ways in which we treat them and expect them to behave. This study includes sufficient examples of differential treatment of men and women MODVOPPP applicants and students to provide valuable and instructive material for such an effort. One example, and one only, may suffice to illustrate the point.

Many men and women students reported to us that at one time or another during professional training they considered dropping out of school. If they discussed these considerations with faculty members or administrators in their schools (and many did not), men typically received strong and insistent encouragement to remain in school and complete professional training. By comparison, women more often reported a neutral and/or indifferent response--typically a "do whatever you want to" response. This difference in response is instructive because it represents one of the small but myriad ways in which women receive and ultimately must act on different cues in their environment which in turn result in different behaviors. However it is also instructive because we presume it represents, at least in part, an assumption held by the faculty members or administrators in question that women are not seriously committed to professional training and practice, that they are less able than men to withstand the stress and pressure of training, that they more often drop-out and do not complete training, and so on. A film or film series depicting such comparative incidents would, in our judgement, be a most effective means for educating us all to the minute, numerous, and pervasive differences in the ways in which men and women are treated and through which they learn to behave differently. We believe that such education is an important and appropriate beginning for eliminating the complex and subtle barriers to success which women face as MODVOPPP applicants, students, and practitioners.

VI. CONCLUDING REMARKS: SOME OBSERVATIONS ON CURRENT TRENDS

Throughout the nine substantive volumes of this report we have discussed and considered the influences of various current health care and social trends on opportunities for women's successful participation in the MODVOPPP health professions. These trends have included: gradual changes in the organizational and economic bases of health care delivery from the once predominant professional entrepreneurial model toward group and institutional forms; pressures on health education to experiment with and prepare students for these new forms of care; increasing federal financial involvement in and influence over the objectives and content of health education; increasing federal interest in and support of new and experimental forms of institutional health care delivery; the influence of the women's movement in changing social definitions and expectations for women's roles and opportunities in society; changing life styles among young people which appear to involve more androgynous forms of individual behavior and less traditionally and sharply defined sex role differences in work, marriage, and parental responsibilities; and changing values among MODVOPPP students which include severe reservations about the single-minded dedication to professional practice which has traditionally characterized and been required of the MODVOPPP health professional, coupled with an insistence on opportunities to combine professional practice with personal life interests in a reasonable manner. These trends, plus rapid advances in medical technology, all support and lead to increasing use of institutional forms of health care delivery as a more prevalent practice mode for the future. This augurs well for women since institutionally-based health care provides the flexibility which women's dual familial and professional roles require. In addition, it seems unlikely that the momentum of women's recent increased enrollments in the MODVOPPP health professions schools will be slowed unless some major economic, political, or social upheavals occur in the next several decades.

However, as we have learned from our national efforts to achieve racial equality in education, work, and all aspects of social life, equal opportunity is difficult to achieve and is not adequately measured by changes in numbers only. That is, increasing numbers of women and minorities in public and private arenas once closed to them is a first step, but equality of opportunity to participate fully and equally in the status and other rewards offered by formal and informal social organizations is also a crucial measure of equal opportunity and must follow as a second step. For women, no less than for racial minorities, this will be the next critical step in achieving equal opportunity in the MODVOPPP health professions.

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APPENDIX A

REQUEST FOR PROPOSAL (RFP), REVISED JUNE, 1975

1. PURPOSE

The major purpose of this study is to explore the nature of the barriers which women face in being admitted to and graduated from schools leading to health professions. The schools we will refer to as MODVOPP are Medical, Optometry, Osteopathic Medicine, Dentistry, Veterinary Medicine, Podiatry, and Pharmacy. Also to be studied are schools of public health leading to higher degrees.

This is primarily an exploratory study. It is solicited by the Women's Action Program, which is located in the Office of Special Concerns, Office of the Assistant Secretary for Planning and Evaluation, DHEW. One of the major missions of the Women's Action Program is to identify sex discrimination in the administration of HEW-funded programs and recommend policy changes which will facilitate delivery of the Department's services to women. The exploratory approach taken for this study is based upon the realization that not enough is known about the process of discrimination against women to permit more systematic research, or to assess alternative forms of intervention designed to achieve equal opportunity based on sex. Thus, at this first stage, the most important task is the discovery of the significant variables in the achievement of health professions on the part of women.

The resources available for this study are four (4) person-years. We expect to let the contract in June, 1974, so that work can begin in July, 1974 and the final report of the study can be completed by June 30, 1975.

The contractor is to provide a tentative description of the discrimination process, if any, which constrains women from entering the health professions. The findings should suggest critical variables and based on these, a tentative model for encouraging the success of women as applicants and students in the health professions schools. The goal is to develop a conceptual model which can be tested empirically in future studies and which will also provide preliminary guidance for: (1) ways in which the Department can improve its present process for evaluating the effectiveness of affirmative action plans for women submitted by the health professions schools in compliance with provisions of the Public Health Service Act and the Higher Education Act; (2) changes in Federal policies which will work to eliminate barriers to women in the health professions; (3) affirmative actions for women which the Department could suggest to the schools; and (4) ways in which Federal program planning and support money to the schools can be better allocated for maximum impact in eliminating existing barriers to women.

Among the questions to be explored by the study are:

1- Are there significant differences in the evaluation process used by the admissions boards of health professions schools with respect to male and female applicants, or can the low number of women in health professions schools be attributed entirely to a priori barriers which preclude women from applying?

2- For women applicants who might be applying to MODVOPP and public health schools several years after the completion of undergraduate training, is age a significant variable? Are there other significant background variables--such as marital and parental status--which affect the opportunities of groups of women? Does nursing training, for example, help or hinder a woman applicant to one of the MODVOPP or public health schools? Is job-related and total life experience evaluated for mature applicants, or is it another barrier to be overcome?

3- If such barriers exist, how can the schools change their applications review process or their requirements so as to eliminate them? Can the schools do anything else to increase the number of female applicants?

4- What are the major barriers to female student success in the health professions schools and what federal intervention could assist in eliminating them?

5- Are there significant differences in the ways in which male and female health professions students finance their educations? What, if any, implications does the answer to this question have for HEW policy in support of health manpower education?

6- What difference in employment opportunities for men and women graduates affect their choices of field of study?

II. BACKGROUND

In order to practice a health profession one must, of course, be a graduate of an accredited health profession school, and be licensed. Data collected by the U.S. Office of Education demonstrates that there are few women being graduated in the health professions outside of nursing. The chart below shows the number of degrees conferred on men and women for the academic year 1970-71 in the United States.* (All data are for first professional degrees requiring at least 6 years, except pharmacy, which include also four year degrees conferred.)

Footnote: * Data compiled by National Center for Educational Statistics, Earned Degrees Conferred: 1970-71, by Mary Evans Hooper, Higher Educations Surveys Branch.

FIELD OF STUDY	TOTAL DEGREES	MEN	WOMEN	PERCENT OF WOMEN
Medicine	8,986	8,157	829	9.2
Osteopathy	472	461	11	2.3
Dentistry	3,777	3,731	46	1.2
Vet. Medicine	1,252	1,154	98	7.8
Optometry	531	518	13	2.4
Podiatry	240	235	5	2.1
Pharmacy	4,881	3,889	992	20.3
Public Health	1,342	850	492	36.7

The "Comprehensive Health Manpower Training Act of 1971" (formally, the Amendments to Title VII of the Public Health Service Act) requires that all health professions schools which receive grants, loans, contracts, or other federal money as a training center must assure the Secretary of HEW that they do not practice sex discrimination in their admissions policies or practices nor discriminate on the basis of sex against individuals after their selection. The basis of this Request for Proposal is the belief that the schools do not fully understand their role in creating barriers for women who seek to apply, nor do they understand how they can affirmatively work toward eliminating some of these barriers.

It is also recognized that DHEW needs to know more about the process of discrimination in order to provide guidance to the recipients of its resources in meeting the requirements of the legislation. Knowledge of the specific barriers to women in the health professions must become part of the overall DHEW planning effort in order for change to occur on any significant scale.

Discrimination is not a process which readily lends itself to measurement; many differ even as to its definition. The gross data suggest that there may be institutional barriers placed before women seeking to enter the health professions (other than nursing). Administrative decisions and legal precedents have, of course, delineated some of the more blatant aspects of discrimination; but statistical data present only part of the picture. The Public Health Service Act requires the Department to enforce and monitor the taking of affirmative action by the schools to right wrongs caused by past practices; yet we have little knowledge of the process of discrimination upon which to base an evaluation of the potential effectiveness of affirmative action plans. Attitudes of individuals interact in subtle ways to shape institutional policies, which in turn affect attitudes. For example (to take only a simple case), if a woman suggests that she will need child care assistance in order to attend school full time, the fact that the institution has no such form of assistance will influence the attitudes of admissions personnel toward her application. The same attitudes may very well perpetuate the school's policy of not providing some form of child care assistance. While we are not suggesting the undertaking of a major attitudinal study, we believe it is possible to understand the operation of both the formal and the informal factors influencing admissions criteria and the conditions for successful completion of training. This study is aimed at exploring these less obvious forms of discrimination (or practices which have the effect of discrimination) against women.

Existing literature on the subject is sparse; the studies carried out in this area have concentrated almost exclusively on data on numbers of women enrolled (and almost exclusively on medical schools) and have concluded (directly or by implication) that it is the fault of "society" at large that more women are not motivated to become health professionals. Preliminary investigation indicates that while early socialization plays a significant role in the channeling of women into sex-stereotyped occupations, additional hurdles confront the few women who nevertheless seek non-traditional professions. This study will focus on those women whose motivation to pursue a health profession has somehow survived the socialization process: we wish to determine the major deterrents they are now facing as applicants and as students, and to a lesser extent, their retrospective perception of experiences prior to admission which positively or negatively influenced their decision to apply.

REVISED SCOPE OF WORK
APRIL 1975

III. SCOPE OF WORK

A- Tasks This is to be an exploratory study focusing on the process of discrimination against women in the health professions schools. The following tasks are described to reflect the scope and nature of the effort required; bidders are encouraged to consider alternative approaches to organizing the work and the resources and to present a rationale for the approach proposed.

1. Review of Existing Data

We are not seeking primarily statistical data to document the scope of discrimination, although an adequate description of the discrimination process may well include some statistical data. Instead, the first task will be a brief analysis of the existing data in order to guide the development of the study design. This analysis should suggest the best combination of schools and/or programs for on-site observation, in order to gain a comprehensive picture, and some informal hypotheses regarding the relevant variables in the discrimination process. Together with the balance of the study, this initial examination of the available data should also reveal data gaps, which could be filled by revisions in the Department's reporting requirements of recipients. No more than one-fifth of the total effort should be spent on this task, and bidders are encouraged to propose specific cost-effective strategies to minimize the allocation of contract resources needed here.

For all MODVOPP and public health schools, and their students, data should be compiled if possible on at least the following items; wherever possible, these data should be further classified by program, by school, and individually, by age and racial/ethnic background, for a number of years:

a- total number of women who apply to the MODVOPP and public health schools, number admitted, number graduated, and relationship to the number of men for each category for each school;

b- comparison of the scholastic records and entrance exam scores of male and female applicants to health professions schools, comparison of their academic records during their professional training; relative weights given to scholastic records, and other factors in the ranking of applicants;

c- comparison of undergraduate majors of women admitted and their entrance exam scores to those of men accepted;

d- indication of recent changes that have occurred in enrollment patterns of the health professions schools or recently observed changes in the selection of undergraduate majors by women;

e- kinds of careers or specializations pursued by women upon completion of their training in health professions schools compared with their male classmates.

f- numbers of persons by sex who receive financial aid as undergraduate and graduate students in the health professions schools by size and type (scholarship, fellowship, assistantship, etc.) of award. A comparison of the scholastic records of men and women who receive financial aid; and a comparison of all the ways in which men and women finace their educations.

2. Develop detailed study methods and a work program for gathering new information about the nature of the discrimination process. This component of the study has to do with how women are perceived by faculty, counselors, admissions boards, and other, when they aspire to and pursue careers in the health professions.

The study should focus on male and female students in the health professions schools in academic year 1974-75, and applicants for matriculation in academic year 1975-76. Three aspects of their experience should be considered:

A- Experience in the admissions process itself: Particular attention should be given to the informal as well as explicit procedures and criteria employed by admissions staff, personal interviewers and selection panels. The kinds of questions put to men and women applicants and various subjective methods for judging applicants are of special interest here.

B- Health profession school experience to the point of graduation and the taking of next steps: Particular attention should be given to supportive services available to men and women (including, but not limited to financial support), and their comparative "fate" and/or decisions vis-a-vis critical events such as choice of specialties, special study programs, and placement in post-graduate work, internships, residencies and jobs. What is the nature of the process leading to each of these events or decisions; is it the same for men and women?

C- Retrospective experience relevant to career choice and preparation for application: Here emphasis should be placed on the most recent level of school (high school or undergraduate school), but should not exclude experience at earlier stages of the individual's life history which are spontaneously offered by the respondent.

The objective here is to explore the factors which operate to exclude women from the health professions prior to the point of application and thereby limit the number of women in the applicant pool from which the schools make their selection. Since the somen who are the focus of this study have already decided to apply, or have applied successfully and are now in a health professions school, they cannot be considered representative of all women. However, they have presumably been exposed to the same general set of influences and may even be more sharply aware of them than are most women, since they have had to confront and overcome (or ignore) those experiences which tended to influence them away from a decision to enter one of the health professions. While it is not the focus of this study, this area of investigation is expected to suggest the nature of a discriminatory process which occurs at an earlier stage. The findings could be used to design a more systematic study of the extent of the early "selecting-out" process and its relative contribution to the ultimate scarcity of women in the health professions.

For example, it will be important to discover how the health professional associations presently help or hinder women aspirants (and in what ways they can improve their efforts on behalf of women). Many groups, such as the American Medical Association and the American Optometric Association, distribute recruitment materials for use by schools. The contractor should analyze the impact of such materials and suggest possible ways of using them (or developing additional materials) to help in the recruitment of women.

The longitudinal aspects of this approach should be borne in mind throughout. The contractor will be collecting information from people who attended high school and undergraduate school between the years 1965 through 1973 (of course there will be some who attended even earlier), during which time there may have been measurable change both in attitudes towards women and accompanying opportunities. Any significant trends revealed by the information gathered should be noted and discussed in terms of implications for the future. In particular, we wish to note the variety of new or experimental programs which have been developed in recent years and compare them with the traditional programs for their impact on women. These include six-year medical programs for undergraduates, special training for pre-medical students (and aspirants to other health fields), and early admissions programs.

D- To the extent possible, several years post-graduation experience of health profession school graduates, especially in internship and residency (but also in private practice). The objective here is to explore the differing experiences of men and women graduates as they affect preceptions and choices of students in the last years of school.

3. Recruit and train (if necessary) the staff needed, and implement the study plan.

4. Refine the study design and submit an interim report of progress. It is expected that the statistical analysis and first three months of actual field work will yield new information which makes revision and refinement of the study design both possible and desirable. Since this is customary in exploratory studies, an assessment of the preliminary findings and refinement of the study design should be specifically scheduled at the end of five months and an interim report, setting forth the early findings and proposed redesign, prepared and submitted to the Project Officer for approval.

At this time, the Women's Action Program will convene a Resource Advisory group of experts on health professions schools (both from within HEW and from the professional school community) to help us evaluate the report and make plans for the remainder of the study. The contractor will meet with the project officer and the Resource Advisory group for a full discussion of the report and make any changes mutually agreed upon.

5. Based on the literature review and the conceptual approach suggested in the interim report, prepare informal working papers on each of the following topics:

(a) History, profile, social image, professional values of each of the (MODVOPPP) professions being studied.

(b) The accreditation process and its relationship to the process of change at the (MODVOPP) institutions.

(c) Internship and residency systems, including centralized placement services and relationships between schools, teaching hospitals, clinics and preceptorships; and their varying impact on men and women students.

(d) Two additional such working papers on major issues discussed in the Interim Report, to be agreed upon later.

6. Analyze findings and prepare final report. Upon completion of the field work, the findings will be analyzed to identify those variables which appear to be significant in the discrimination process. Using these variables, the contractor will develop a tentative conceptual model of a health professions recruitment and education system which would maximize opportunities for women. The model must be designed to facilitate subsequent empirical testing, and the final report should also include recommendations for future research, as well as any immediate program or policy actions which HEW or the health professions schools and organization might undertake, based upon the findings. The contractor should also be prepared to make *several presentations* of the findings, as described below.

B- METHODS The following is a suggested approach to methodology which should enable the gathering of data of sufficient depth and breadth, given the constraint of resources; it is not meant, however, to delimit the range of possible methods. Preference will be shown to bidders who provide a detailed description of methods reflecting a high degree of reliability and creativity.

For each type of program a set of schools might be ranked by the percent of women graduates over a number of recent years, and then characteristics of the schools examined in order to make some inferences about potentially significant variables. Based on these variables, informal hypotheses could be developed for the study design. (If this method is followed, the proposal should contain some indication of possible variables to be examined in such a process.)

The objective is not to construct a representative sample in the technical sense, but rather to employ interview schedules and/or other observation method(s) of such quality and depth, and observations collected in such number, as to assure the emergence of a reasonably complete and detailed picture. Throughout, the respondent should be primarily concerned with the richness and reliability of information obtained, rather than with quantity of observations. Possible additional approaches are direct observation of key events in the admissions and matriculation processes, group interviews (possibly a series of interviews with the same groups), participant observation, "debriefing" interviews with applicants and students, and document analysis.

To date school's have been visited and interviews conducted with individual women and men students, faculty and administrators, and groups of women students. The variables examined for possible significance are geographic location, urban vs. rural location, funding (public vs. private), university and medical center affilation, status, representation of minorities and women in enrollment, and research vs. clinical orientation. Completion of the data collection effort will require the following additional sites, distributed as much as possible ever these variables: three medical, two osteopathy, two dentistry, one veterinary, one optometry, one podiatry, one pharmacy, and one public health school.

In each of these additional site visits, and also through a return visit to some of the schools visited to date, the number of interviews with men students should be increased sharply to provide a reasonably credible picture of the socialization process for all health professional students. These should include nominal group interviews with men, as well as some mixed groups. The objective here is to be able to compare the experiences of women students with those aspects of (MODVOPPP) school experience that are common to all students. Also, use of the nominal group technique should be extended to generate possible solutions to the unique problems faced by women students.

C. PRODUCTS AND SCHEDULE The review of existing data should require approximately two months to complete. The interim report, containing a refined study design, based on analysis of existing data and initial observations, should be delivered three months later (approximately five months into the study). Ten copies of the interim report should be submitted to DHEW.

The final report (25 copies) should be delivered in *February, 1976.* The report shall include a summary of available data on the representation of women in the health professions schools and in the (MODVOPPP) professions. These data shall then be used as part of a detailed analysis of the socialization process undergone by women in the schools. The report should additionally present a tentative conceptual model of a health professions education system, including the recruitment, admissions, *and placement* processes, designed to increase the rate of entry of women into the health professions. The model must be of sufficent specificity and detail to enable empirical testing without further analysis. In addition, the report should:

(1) *provide useful information and guidance to health professions training institutions actively interested and engaged in recruiting and training increased numbers of women in those professions;*

(2) provide HEW with preliminary guidance in formulating policy and program designed to facilitate the entry and practice of qualified women in the health professions, and

(3) inform future HEW research including:

a- the identification of significant variables which influence or limit the entry and practice of women in the MODVOPPP professions,

b- the development of tentative models of the professionalization process as it affects women at MODVOPPP schools and a design for testing of the models, and

c- the identification of significant gaps and/or incompatibilities in existing data which hamper current and potential future research

The contractor shall submit a draft of the final report to be reviewed by the project officer and the Resource Advisory group and incorporate mutually-acceptable changes in the final submission.

One original and one copy of the report shall have appendices containing: copies of all data, summaries, correspondence, records, exhibits, attachments, and all other pertinent materials used in the writing of the report.

The contractor shall prepare an abstract to be submitted as a part of the final report which can easily be detached for separate distribution.

The abstract will be a maximum of ten pages, single-spaced (15 double spaced pages).

The abstract will contain the following:

(a) Title;
(b) Contract number;
(c) Sponsor (supporting agency);
(d) Contractor's name and address

The substantive information in items e-h below will be cross-referenced in the left-hand margin of the abstract to the relevant page numbers in the hard copy of the final report. Items e-h are major headings that should be used to structure the abstract.

(e) I. Statement of the Problem
Describes the overall problem of issues to which the evaluation is addressed.

(f) II. Study Objectives
Describes the specific questions the study set out to answer and the intended products of the contract.

(g) III. Study Methodology
Describes the key elements of the design, data collection and strategy, measurement instruments, data analysis procedures and other related methodological factors of the study.

(h) IV. Major Findings and Recommendations
Describes the results and conclusions of the study, and summarizes major policy recommendations, if any.

The contractor shall send four (4) copies of the final report (including abstract), at least one of which must be first generation copy suitable for reproduction, directly to:

ASPE Documentation Center
Office of the Deputy Assistant Secretary for Program Systems
Room 4661-N
Health, Education and Welfare
330 Independence Avenue
Washington, D. C. 20201

Three presentations shall be prepared by the contractor for an audience to include HEW officials involved in health manpower policy research, interested researchers, and involved groups from community organizations.

In order to enhance the usefulness of the final report, presentations will also be made at annual meetings of six (MODVOPPP) professional associations, or school associations, if appropriate, and with the agreement of the project officer.

These presentations will include a prospectus consisting of slides or view graphs, written materials and audio tape.

APPENDIX B

METHODOLOGY

EXHIBIT A: MORRILL LETTER

EXHIBIT B: SCHOOL SITE SELECTION BY CHARACTERISTICS

EXHIBIT C: FIELD RESEARCH INSTRUCTIONS AND INSTRUMENTS

- EXHIBIT C1: Topical Guidelines for Interviews with Faculty and Administrators
- EXHIBIT C2: Topical Guidelines for Interviews with Men and Women Students
- EXHIBIT C3: Student Interview Data Collection Form
- EXHIBIT C4: Instructions/Guidelines for Use of the Group Interviews with Selected Groups of Students
- EXHIBIT C5: Guidelines for Materials and File Reviews

EXHIBIT D: ONE PAGE ABSTRACT AND CONFIDENTIALITY STATEMENT

EXHIBIT E: SUMMARY OF INDIVIDUAL INTERVIEWS

EXHIBIT F: MODVOPPP GROUP INTERVIEW SUMMARY

EXHIBIT G: INTERN AND RESIDENT INTERVIEWS

EXHIBIT H: GUIDELINES FOR INTERVIEWS WITH INTERNS AND RESIDENTS

EXHIBIT I: MODVOPPP DATA ANALYSIS

- EXHIBIT I 1: MODVOPPP Data Analysis Guidelines and Instructions
- EXHIBIT I 2A: MODVOPPP Data Analysis
  MODVOPPP School/Institution Analysis and Report
- EXHIBIT I 2B: MODVOPPP Data Analysis
  Outline for Individual School Analysis
- EXHIBIT I 3: MODVOPPP Data Analysis Coding Categories

EXHIBIT A: MORRILL LETTER

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

Dear Dean:

This letter seeks your cooperation in an HEW-funded research effort which involves interviews with students, administrators and faculty at a select group of health professions schools, including your own institution. This is a basic research effort funded out of my office, and as such, is not related to the Department's Office of Civil Rights in any way. Accordingly, the identity of the individual schools visited will be known only to the contractor; otherwise, I would address you personally.

The research involves a one-year exploratory study of women enrolled in the health professions schools of medicine, osteopathy, dentistry, veterinary medicine, optometry, podiatry, pharmacy, and public health (MODVOPPP professions). The primary purposes and desired outcomes are several:

(1) To provide useful information and guidance to health professions training institutions actively interested and engaged in recruiting and training increased numbers of women in those professions;

(2) To provide HEW with preliminary guidance in formulating policy and programs designed to facilitate the entry and practice of qualified women in the health professions, and

(3) To inform future HEW research including:

  a- the identification of significant variables which influence or limit the entry and practice of women in the MODVOPPP professions,

  b- the development of tentative models of the professionalization process as it affects women at MODVOPPP schools and a design for testing of the models, and

  c- the identification of significant gaps and/or incompatibilities in existing data which hamper current and potential future research

Many institutions have already begun to increase their recruitment and training of women through innovative programs and practices. As a part of our study effort, we hope to aggregate the practices and experiences of these schools and disseminate this information to others. Identities of course, will continue to be known only to the contractor.

Urban and Rural Systems Associates (URSA), under who's letter this explanation is attached, is a private research firm which has been retained by the Women's Action Program in my office to conduct the study. I would appreciate your cooperation in this stage of our research. We look forward to sharing the aggregated findings of the study with all of the schools just as soon as we have a report from the contractor, estimated for early in the fall of this year. Meanwhile, Sharon Rose (202-245-6131 or B. Ann Kleindienst (202-245-6604) of my staff will be happy to answer any questions you may have about the study.

Sincerely yours,

William A. Morrill

William A. Morrill
Assistant Secretary for Planning
and Evaluation

EXHIBIT B: SCHOOL VISIT SITE SELECTION BY CHARACTERISTICS

	# of Field Sites	Urban	Rural	North Central (1)	South	Northeast	West	Public	Private	Free-Standing	Univ. Affiliate	Physically Indep.	Medical Center	Part of Campus	High Status (2)	Low Status (2)	High % Women Enrolled (3)	Low % Women Enrolled (3)
Medicine	9	8	1	1	3	2	3	5	4	1	8	1	2	6	6	3	7	2
Osteo. Med.(4)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A	N/A	1	1
Dentistry	5	5	0	0	2	1	2	3	2	0	5	1	2	2	2	3	4	1
Vet. Med.	2	1	1	1	0	0	1	2	0	0	2	0	0	2	N/A	N/A	1	1
Optometry	2	2	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1
Podiatry (4)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A	N/A	2	0
Pharmacy	3	3	0	0	0	1	2	1	2	1	2	1	1	1	1	2	2	1
Pub. Hlth.	2	2	0	0	1	0	1	1	1	0	2	1	0	1	2	0	2	0
TOTAL	27	21	2	2	6	5	10	13	10	3	20	5	5	13	N/A	N/A	20	7

(1) The four regions are comprised of the following states:

North Central: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Idaho, Wisconsin, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming.

South: District of Columbia, Maryland, West Virginia, Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, New Jersey, New York, Pennsylvania.

West: Arizona, New Mexico, Oklahoma, Texas, Colorado, Alaska, California, Hawaii, Nevada, Oregon, Washington

(2) Where known or applicable, status is defined as the degree of respect accorded a given institution by members of the same profession.

(3) Higher or lower than the national proportion of women enrolled by profession.

(4) This information has been intentionally omitted since the combination of characteristics might identify which schools were visited. Thus totals for site characteristics do not add to 27.

EXHIBIT C

FIELD RESEARCH INSTRUCTIONS AND INSTRUMENTS

1. Faculty and Administrators
2. Men and Women Students
3. Student Interview Data Collection Forms
4. Group Interviews
5. Materials and File Reviews

EXHIBIT C1

MODVOPPP DATA COLLECTION INSTRUMENTS

TOPICAL GUIDELINES FOR INTERVIEWS WITH FACULTY AND ADMINISTRATORS

INTERVIEW INSTRUCTIONS

Your objectives in these interviews are several: (1) to document and further refine the professionalization model as it operates at that school and in general; (2) to obtain a sense of the history and organizations of that institution; (3) to obtain a sense of the institution's current and historic posture, program and policies regarding women applicants and students, and (4) to obtain the respondent's "experienced" opinions and hypotheses regarding the reasons for under-representation of women in the health profession in question and in that institution. In addition, you must determine what statistical data is available at the school and whether we may have access to it. You must also determine whether we may have access to the kinds of other written materials we wish to review while at the school. Remember to be as unobtrusive as possible in conducting interviews with faculty and administrators and let the conversation flow as naturally as possible with maximum opportunity for your respondent to suggest and engage in discussion of topics and issues related to the study but not covered in these guidelines. Remember to ask for specific examples to illustrate points the respondent makes. Finally, remember to request permission to tape-record your discussion, assure the respondent that she/he will not be identified by name or position/institution in any of our public reports or files, and give the Statement of Confidentiality[1] to her/him.

SUMMARY OF TOPICAL GUIDELINES--FACULTY AND ADMINISTRATION

I. History of School

II. Overview of School's Current Organization of Academic and Administrative Responsibilities

III. Institutional Policies Relating to Women

IV. Recruitment CAP

V. Admissions CAP

VI. Financing

VII. The Academic Process at this Institution

VIII. Accessibility of Professional Women

IX. Special Efforts Made to Accommodate Women at this Institution

X. Areas of Possible Sex-Based Differences in Experiences at this Institution

XI. How the Administration Views Women in the MODVOPPP Fields

[1] (Note): During course of study, new federal regulations regarding Confidentiality and Protection of Human Subjects changed procedures from reading statements to handing out copies to each respondent.

I. HISTORY OF SCHOOL (To be asked only of Dean of Institution)

- When school was founded
- Background of relationships with other schools on campus
  - autonomy in admissions policy
  - determination of curriculum
  - progression of interrelationship or independence
- Changes in institution in conjunction with developments in the profession
- Whether institution is affiliated with university

II. OVERVIEW OF SCHOOL'S CURRENT ORGANIZATION OF ACADEMIC AND ADMINISTRATIVE RESPONSIBILITIES

- Departments and divisions of instructional areas
- Faculty committees
- Curriculum structure
- Key participants in policy decisions
  - how admissions policy is determined
  - how curricula/programming decisions are made
  - how evaluation criteria are developed
- Arrangements with affiliate training hospitals and clinics
  - how they are selected
  - who determines content of program
  - who determines criteria for performance evaluation
  - who makes administrative decisions

III. INSTITUTIONAL POLICIES RELATING TO WOMEN

- When first woman student was admitted
- When first woman faculty member was hired
- Attitudes toward admission of women into the institution
  - level of support among trustees
  - level of support among influential alumni
  - level of support among faculty
  - level of support among administrative personnel
- Whether school appears to have a special admissions policy to recruit minorities and/or women
- Institution's assessment of its progress relating to women's admission and assimilation
- Whether there are any other policies or practices which address the particular needs of women--e.g., an Affirmative Action Plan

- Any changes in policy which affect women
- How such changes came about
  - who or what was instrumental in addressing this concern
  - what the actual process of change was

IV. RECRUITMENT CAP

- Whether efforts are made to recruit students
  - by the institution
  - by the professional associations
  - by the school associations
- Whether any efforts are specifically aimed at women
  - to whom addressed
  - prepared under whose auspices
  - distributed by whom
- Whether any career counseling materials are prepared and distributed
  - at the high school level
  - at the college level
- Measurable effects of the recruitment effort
- Additional ways to encourage women to apply

V. ADMISSIONS CAP

- Criteria for selection (past achievement)
  - if a professional test score (e.g., MCAT) is used, its relative importance in deciding among applicants
  - whether there is differential significance given to any parts of the test score
  - whether letters of application are required
  - relative importance of under-graduate grade point average
- Criteria for selection (personal characteristics)
- The personal interview
  - whether interviews are preferred or required
  - number of interviews conducted and their approximate length
  - who conducts the interview
  - whether students participate in the interviewing process
  - how the interviewers are selected
  - training or orientation given to interviewers
  - efforts to evaluate interviewing format

- salient factors to be explored during the interview
- whether the characteristics to be considered have been preselected
- possibilities for differential interpretation or application of admissions criteria
- flexibility in admissions criteria at this institution
- situations where flexibility in applying criteria is likely or possible

VI. FINANCING

- Cost of attending this institution
- Availability of financial aid
- Criteria for distribution
- Any special funds for female students

VII. THE ACADEMIC PROCESS AT THIS INSTITUTION

- An overview of the curriculum
  - description of the pre-clinical program
  - description of the clinical program
- Criteria for evaluation: pre-clinical vs. clinical
- Flexibility in a student's timetable for completing the course of study
- Description of the procedure for specialty selection

VIII. ACCESSIBILITY OF PROFESSIONAL WOMEN

- Number of women on the faculty
- Percent of women on the faculty
- Courses taught by women
- Number of women faculty with tenure
- Number of women in administrative capacities
- Titles held by women and function of the positions
- Whether women participate in the admissions process and how so

IX. SPECIAL EFFORTS MADE TO ACCOMMODATE WOMEN AT THIS INSTITUTION

- Facilities to address the particular needs of women students
  - whether a counseling service exists
  - whether there is a special counselor concerned only with women's problems
  - how effective such a program has been if it exists

- Anticipated difficulties for women at this institution
- Differential provision of facilities for women
  - housing
  - recreation
  - training, clinic facilities
  - medical, including especially family planning, ob/gyn

X. AREAS OF POSSIBLE SEX-BASED DIFFERENCES IN EXPERIENCES AT THIS INSTITUTION

- Comparative annual attrition rates for men and women
- Stages at which a student is most likely to drop out considering variations by sex
- Reasons offered by men vs. women students for dropping out
- Efforts made to counter students' plans to withdraw
- Efforts made to accommodate the particular needs of a student by allowing a more flexible time schedule
  - necessity of part-time employment
  - demands of caring for a family
- Differences in choices of specialties by women comparable to men at this institution
  - what might account for such differences
  - faculty and administration most closely involved in specialty determinations

XI. HOW THE ADMINISTRATION VIEWS WOMEN IN THE MODVOPPP FIELDS

- Opinions, reasons for so few women in the profession
- Opinions, reasons for so few women in this institution
- Opinions, reasons for so few women in the applicant pool
- Aspects of the profession thought to encourage or discourage women from entering
- Thoughts on what women look for in a profession and whether this is changing
- Special difficulties women face in addition to the ones normally associated with MODVOPPP training
- Thoughts on why women tend to choose different specialties than men
- Anticipated differential needs of women at this institution
  - special services
  - different programs
  - different curricula
  - special recruiting efforts

- Reasons for anticipating that women students will have different needs than men
- Changes observed in characteristics of entering women students over time

EXHIBIT C2

MODVOPPP DATA COLLECTION INSTRUMENTS

TOPICAL GUIDELINES FOR INTERVIEWS WITH MEN AND WOMEN STUDENTS

INTERVIEW INSTRUCTIONS

Those items marked with an asterisk (*) should be discussed only with women students. All others should be discussed with both men and women students in individual interviews. The wording you use to raise various topics and the sequence in which you cover them should be dictated by the flow of the conversation. Your objectives in these interviews should be to let them proceed as naturally as possible with your role being unobtrusive and with maximum opportunity for the student to initiate and engage in topics of conversation related to the study which we had not anticipated and have not covered in the following pages. Remember to request frequent examples of specific experiences, policies, situations, etc. which illustrate a general point the student respondent makes in the discussion. Finally, remember to request permission to tape-record the discussion and to give the statement of confidentiality to the student.[1]

SUMMARY OF TOPICAL GUIDELINES--STUDENTS

I. Background Information

II. Preparation for MODVOPPP Training (Pre-Admissions CAP)

III. Recruitment and/or Counselling CAP

IV. Applications CAP

V. Admissions CAP (at this Institution)

VI. Financing

VII. The Academic Process at This Institution

VIII. Specialty Selection CAP

IX. Social Contacts and Collegial Opportunities

X. Accessibility of Professional Women

XI. Areas of Possible Sex-Based Differences in Experiences at this Institution

XII. An Overview of Women's Experiences in Entering a MODVOPPP Field

[1] (Note): During course of study, new federal regulations regarding Confidentiality and Protection of Human Subjects changed procedures from reading statements to handing out copies to each respondent.

INDIVIDUAL WOMEN AND MEN STUDENTS

I. BACKGROUND INFORMATION

- Age
- Marital status
- Current living situation (communal, single, family, etc.)
- Number of children being cared for
- (If different), number of dependents
- Father's occupation
- Father's education
- Mother's occupation
- Mother's education
- Number of siblings older, younger, sex
- Ethnicity
- Location of high school attended
- College attended, location
- Undergraduate field
- Undergraduate grade point average (GPA)
- Professional aptitude test score
- Lapse of time between college graduation and entering MODVOPPP institution
- (If applicable), how time between college and MODVOPPP training was spent

II. PREPARATION FOR MODVOPPP TRAINING (PRE-ADMISSIONS CAP)

- Reasons for choosing to enter this field
- Age when first considered this field
- Age when decision actually was made
- Other professions considered
- Original introduction to this field (i.e., how became aware of field)
- Positive and negative role models
- People with whom decision to enter field was discussed
- Sources of encouragement for entering
- Sources of discouragement for entering
- Reactions from family, friends, teachers, school counselors, others on making this choice.

INDIVIDUAL WOMEN AND MEN STUDENTS

II. PREPARATION FOR MODVOPP TRAINING (PRE-ADMISSIONS CAP) (Continued)

- Career and life choices made by closest friends
- Ramifications of making this choice (e.g. any options foregone such as postponing marriage, children etc.)
- Special pre-MODVOPPP course of study taken to prepare for entrance
- Prior professional work experience

III. RECRUITMENT AND/OR COUNSELLING

- Awareness of recruitment efforts in this field
- Special efforts made to recruit students
  - what they are
  - by whom they are made
- Most effective means of recruiting
  - written materials
  - special techniques
- Special efforts to recruit women applicants
  - whether such efforts took place
  - if so, who did the recruiting
  - where the recruiting was done
  - content of the recruitment effort
  - effectiveness of the recruitment effort
- Suggestions for ways to recruit more women
- Any special efforts to counsel women to enter this field
- Whether career counselling was received during high school
  - if so, by whom was it done
- Whether career counselling was received during college
  - if so, by whom was it done

IV. APPLICATIONS CAP

- Number of schools applied to
- Number of schools interviewed by, which ones
- Number of schools accepted to, which ones
- Number of schools rejected by
  - which ones
  - known, assumed reasons for rejection

INDIVIDUAL WOMEN AND MEN STUDENTS

IV. APPLICATIONS CAP (Continued)

- Factors influencing choices of schools applied to
- Factors influencing decision to enter this school
- Any significant differences among applications process at accepting, rejecting institutions

V. ADMISSIONS CAP (at this institution)

- Whether an admissions examination was required
  - -if so, type, content
- Whether letters of recommendation were required
  - -if so, number
  - -has student seen letters
  - -can copies be made available
- Format of the interview process
  - -how many interviews were conducted
  - -who conducted them
  - -did students participate in conducting the interviews
  - -if so, number, year-in-school, sex, method of selection
  - -content of questions asked
  - -did students focus on different issues than other interviewers
- Tone of the interview
  - -whether encouraging and sympathetic
  - -whether discouraging or uncomfortable
- Whether friends and colleagues report that interviews were fairly consistent in tone and questions asked for all applicants
- Comparison with interviews at other institutions

VI. FINANCING

- Means by which student is financing her/his education
- Types and amounts of financial aid available
- Whether financial assistance was sought
  - -if so, whether student was awarded financial support
  - -what the criteria for eligibility were
  - -whether support is adequate and if not, why not.

INDIVIDUAL WOMEN AND MEN STUDENTS

VII. THE ACADEMIC PROCESS AT THIS INSTITUTION (Individualized CAP's relating to program scheduling and performance evaluation)

- Existence of flexibility in program schedule to accommodate students with special needs
  - -ability to extend course of study over longer period of time
  - -feasibility of taking leaves of absence
  - -special concern given to students with families
- Selections made during course of training
  - -description of process determining clinical rotations
  - -description of process determining internships
- Assessment of the academic process
  - -omissions of essential training during pre-clinical years
  - -omissions of essential training during clinical years
  - -skills where insufficient opportunity was given to develop
  - -desirable patient care infrequent or totally missing during training
  - -other significant learning experiences overlooked during training
  - -characteristics of good/poor instructors
- Factors relating to evaluation of performance during pre-clinical program
  - -explicit criteria used in evaluation
  - -implicit criteria used in evaluation
  - -persons responsible for making judgments
  - -situations allowing for wide discretion when evaluating performance
  - -feelings about evaluations received
- Factors relating to evaluation of performance during clinical program
  - -explicit criteria used in evaluation
  - -implicit criteria used in evaluation
  - -persons responsible for making judgments
  - -situations allowing for wide discretion when evaluating performance
  - -feelings about evaluations received

VIII. SPECIALTY SELECTION (CAP)

- Whether a specialty has been chosen
  - -if so, what it is
- Faculty members significant in specialty selection

INDIVIDUAL WOMEN AND MEN STUDENTS

VIII. SPECIALTY SELECTION (CAP) (Continued)

- Others instrumental in specialty selection
- Reasons for selecting particular specialty
- Other specialties considered
- Reasons for eliminating other specialties
- Any problems in having access to desired specialty, specialty training opportunities

IX. SOCIAL CONTACTS AND COLLEGIAL OPPORTUNITIES

- Amount of social life centered around other students
- Amount of studying done with other students
- *Whether other women have been supportive and in what ways
- Extent to which men and women students interact at this institution
  - -with one another
  - -with faculty
  - -with residents and interns
- Dissatisfactions with fellow students
- Contact with male, female faculty
  - -possibilities for informal contact
  - -whether contact is adequate
  - -suggestions for further contact desirable to student
- Reasons for any barriers to interpersonal contacts encountered at this institution
- Informal grapevine for easy assimilation at this institution
  - -advice on courses or faculty to avoid or seek out
  - -information on clinical rotations
  - -sources for learning "the ropes"

X. ACCESSIBILITY OF PROFESSIONAL WOMEN

- Women faculty who have taught classes to respondent
- Courses these women taught
- Other contact with women faculty
- Number of women administrators
- Whether there are women advisors or counselors

X. ACCESSIBILITY OF PROFESSIONAL WOMEN (Continued)

- Existence of an organized women's caucus or committee concerned with the status of women at this institution
  - -if so, who comprises the membership
  - -whether respondent belongs
- Existence of special counselling services addressing the particular needs of women
  - *-if yes, whether they are adequate
  - *-whether respondent has taken advantage of such services
  - *-for what purposes respondent, other women students seek special counselling

XI. AREAS OF POSSIBLE SEX-BASED DIFFERENCES IN EXPERIENCES AT THIS INSTITUTION

- Whether school appears to have a special admission policy to recruit minorities and/or women
- Current posture toward women by the administration
- Changes that have taken or are taking place which affect the status of women at this institution
- Amount of support for effecting change, improving conditions for women at this institution
- Instances of possible differential treatment given men, women, if any
- Recognition by the institution of particular problems women face during their training
- Steps taken by the administration to accommodate women's needs beyond the training institution
  - -involvement in adequate provision of facilities for women at teaching hospitals
  - -concern with physical safety for women during various phases in their training
- Specific instances, if any, of overt discrimination observed or specifically experienced
- Awareness of instances, if any, of sex stereotyping or generalizations of female behavior or attitudes
- Instances of discomfort suffered during pre-clinical classes
  - -comments by male faculty
  - -attitudes toward women patients

INDIVIDUAL WOMEN AND MEN STUDENTS

XI. AREAS OF POSSIBLE SEX-BASED DIFFERENCES IN EXPERIENCES AT THIS INSTITUTION (Continued)

  - -differential questioning of men, women during class
  - -neglect during class participation
- Instances of discomfort suffered during the clinical program
  - -comments by male staff members
  - -attitudes toward women patients
  - -failure to be included in activities open to men
  - -prevention from participation in certain types of exams, treatment procedures
  - -exclusion from informal seminars or discussions with male staff
- Adequacy of facilities provided for women at this institution
  - -housing
  - -recreational
  - -counselling
  - -changing rooms and lavatories
  - -child-care provisions
  - -medical facilities
  - -family planning and ob/gyn services
- How this institution compares with other MODVOPPPs

XII. AN OVERVIEW OF WOMEN'S EXPERIENCES IN ENTERING A MODVOPPP FIELD

- Opinions, reasons for so few women in the profession
- Opinions, reasons that more women are not enrolled at this institution
- Opinions, reasons for so few women in the applicant pool
- Aspects of the profession thought to encourage or discourage women from entering
- Thoughts on what women look for in a profession and whether this is changing
- Special difficulties a woman faces in addition to the ones normally associated with MODVOPPP training
- Thoughts on how (other) women view their MODVOPPP experience
- Thoughts on (other) women's explanations for why so few women are in this field
- Information about (other) women who abandoned plans to pursue a MODVOPPP career and reasons for doing so
- Thoughts on why women select different fields of specialization from male colleagues

EXHIBIT C3

STUDENT INTERVIEW DATA COLLECTION FORM

This form was developed half-way through the study. It was used to eliminate the time spent in interviews gathering this data.

CONTRACT: HEW OS-74-291

A32

School Code: ____________
Tape Number: ____________
Coder: ____________

Interviewed by: ____
Date: ____

For Office Use

74-4: STUDENT INTERVIEW DATA SHEET

1. Initials ________ Sex ________ Year in School ____________

2. Specialty Chosen ____________ 3. Current GPA (if known) ______ 4. Age ____

5. Marital Status: Married ___ Single ___ Divorced ___ Separated ___ Widow(er) _____

   If married: how long? ____________ Is spouse contributing to cost of education? ____________

6. Current Living Situation:

   On Campus; Dorm ___ Fraternity/Sorority ___ Married Student Apt. ___

   Off Campus; Rooming House ___ Apt. ___ House/Rent ___ House/Own ___

   House/Apt. Significant Other ___ Communal ___

   Other; (describe) ____________________________

7. Dependents: Children ____ Ages ____________ Other (Specify) ____________

8. Father: Education ____________ Occupation ____________

9. Mother: Education ____________ Occupation ____________

10. Siblings: Brothers ___ Older ___ Younger ___

    Sisters ___ Older ___ Younger ___

11. Ethnicity ____________ Religious Background ____________

12. Location of High School ____________________________

13. Location of College ____________________________

14. Undergraduate Field ____________ GPA ______ Professional Test Score ________

15. Lapse of Time Between College & Professional School ____________

    Time Spent: Graduate School (Field) ____________________

    Work (Specify) ____________________

    Other (Specify) ____________________

16. At what age did you first consider this profession? ____________

    At what age did you actually make the decision? ____________

74-4: Student Interview Data Sheet

17. Was this profession your first choice? ____________________

If no, what others did you consider? ____________________

18. How many schools did you apply to? ____________________

At how many did you interview? ____________________

At how many were you accepted? ____________________

Which of these was your first choice? ____________________

Did you apply during more than one year? ____________________

19. How are you financing your education? (Sources and Proportions.)

____

____

____

____

20. What were your reasons for choosing this profession?

____

____

____

____

____

EXHIBIT C4

MODVOPPP FIELD DATA COLLECTION INSTRUMENTS

INSTRUCTIONS/GUIDELINES FOR USE OF THE GROUP INTERVIEWS WITH SELECTED GROUPS OF STUDENTS

I. INTRODUCTION AND BACKGROUND

The Nominal Group Process is a technique for deliberately structuring a group meeting to facilitate the identification of problems or the generation of information concerning a topic or issue from a target group of individuals.[1] The process includes the following sequence of small group activity: (a) Silent generation of ideas in writing, (b) Round-robin listing of ideas on an easel, (c) Serial discussion of ideas recorded on the easel-pad, and (d) Silent listing and ranking of priorities among those ideas. This specific sequence of events is critical and is based upon social-psychological research which indicates that this procedure is clearly superior to conventional discussion groups in terms of generating higher quality, quantity, and distribution of information on fact-finding tasks.[2]

We will use the Nominal Group Process with groups of students at the MODVOPPP schools we visit for the following purposes:

- To obtain a broad range of opinions, experience, and insights regarding student's experiences in entering the particular MODVOPPP profession and that institution
- To obtain recommendations for HEW and MODVOPPP schools regarding programs and policies that are based on examples of supportive and encouraging experiences the women students have had in preparation for and during their professional training
- To identify individual students who seem to be particularly insightful and articulate and with whom we would like to conduct further, in-depth individual interviews

A maximum of only eight to ten individuals may confortably participate effectively in this process. We will convene only as many groups in each school as our own staff can lead. Normally, that would be only one or two at most. The meeting will require approximately two hours. However, if there are time constraints, the minimum required time is one hour.

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[1] A complete description of the program planning model is found in A. Delbecq and A. Van de Ven, "A Group Process Model for Problem Identification and Program Planning," in Journal of Applied Behavioral Science, September, 1971.

[2] A complete treatment of the social-psychological dynamics of nominal and interacting groups is available in A. Van de Ven and A. Delbecq, "Nominal and Interacting Groups for Committee Decision-Making Effectiveness," in Academy of Management Journal, 1971.

II. PROCESS

The nominal group process requires the following steps:

1. PREPARATION

   Arrangements for adequate meeting space should be made with the contact person in advance. We will supply pads, 3 x 5 and 5 x 8 cards, markers and recording equipment.

2. INTRODUCTION

   Leaders should explain the process to the participants, distribute confidentiality statements and study summary (Exhibit D), and request consent to tape record the meeting.

3. NOMINAL GROUP ACTIVITY

   Participants are then asked to respond in short phrases on 5 x 8 cards to the question posed to the group. Questions to be used in the field include:

   - Given your experiences and observations, what are the problems a (woman/man) encounters in becoming a (MODVOPPP professional)?
   - Given your experiences and observations, what encourages a (woman/man) to become a (MODVOPPP professional)?
   - In what ways do you fit/not fit the general model of a (MODVOPPP professional) in our society?
   - What does it mean to you to be a (MODVOPPP professional)?

   Give the participants approximately ten minutes to respond. Discourage discussion and refrain from giving examples or too much clarification to avoid biasing respondents' statements.

4. ROUND ROBIN

   Request participants one after another to read one item off their card. Record items on easel pads. Continue around the room as many times as necessary to get all items recorded. A show of hands is used to tally duplication of items. Do not permit discussion until all items have been recorded on the easel pads.

5. DISCUSSION

   The purpose of discussion is primarily to permit the participants and our staff to clarify responses to the task question and to provide participants an opportunity to express strength of feeling about different items. An additional purpose of the discussion for us is to identify those students who appear to be potentially useful and articulate respondents for individual interviews.

6. RANKING

   If time permits, ask the participants to rank the three items (or five if there are over 20 responses) they consider most important on separate 3 x 5 cards (one item per card). Have them write #1 on the card of the most important, #3 on the card of the least important of the selected items, and #2 on the remaining cards.

7. CLOSING

Collect all cards and easel pads and code by site and by set and number of participants. Collect student data forms (Exhibit C3) if used.

EXHIBIT C5

MODVOPPP FIELD DATA COLLECTION INSTRUMENTS

GUIDELINES FOR MATERIALS AND FILE REVIEWS

Prior to the field visit, permission should be requested to obtain and review certain statistical data from school records as well as other kinds of materials. The following is a suggested minimum list of pertinent data and materials to be obtained and reviewed during field visits.

I. STATISTICAL DATA FROM RECORDS

This would include summary records of student applications, admission forms, class rosters, and individual class standings by year of students currently enrolled. Forms are supplied to the contact person by mail ahead of time, and hopefully will be completed when we arrive. (Exhibit I includes data forms.)

II. SCHOOL PUBLICATIONS

Copies of all brochures, announcements, and catalogues published for use by the school in recruitment, admissions, course programming, and general information dissemination.

III. STUDENT PUBLICATIONS

Copies of yearbooks, newsletters, or other publications which may describe student attitudes toward their training experiences at the school, in the profession and toward the faculty, the administration, school policy, and so on.

IV. RECRUITMENT, ADMISSIONS POLICIES, MEMORANDA, MATERIALS

Copies of written policies, instructions, criteria, forms, training materials, and other materials relating to the recruitment and admissions process at the institution and used by members of the faculty and administration who are participants in the recruitment and admissions process.

V. AFFIRMATIVE ACTION MATERIALS

Copies of issue papers or memoranda on institutional policies regarding affirmative action plans in general and regarding the admissions, training, and employment of women in particular. Should include the school's written Affirmative Action Plan if it has one.

VI. MATERIALS FROM COMMITTEE ON THE STATUS OF WOMEN

If the institution has a formal or an informal committee or task force on the status of women, copies of any policy statements, studies, recommendations, or other materials generated by the group in its work.

VII. OTHER MATERIALS

Copies of special studies or research conducted by the institution or in process regarding the role and status of women in the profession, in the school; any other materials suggested by our respondents as relevant, useful, and potentially available.

EXHIBIT D

1-PAGE ABSTRACT & CONFIDENTIALITY STATEMENT

URSA
Urban and Rural Systems Associates
Pier 1-1/2, San Francisco, California 94111
415 398-2040

EXPLORATORY STUDY OF WOMEN IN THE HEALTH PROFESSIONS SCHOOLS

URSA is a private social planning research firm currently under contract to the Women's Action Program (WAP) of the Department of Health, Education, and Welfare (HEW) to conduct a study of women in the health professions schools. The professions include Medicine, Osteopathic Medicine, Dentistry, Veterinary Medicine, Optometry, Podiatry, Pharmacy, and Public Health (MODVOPPP). The purposes of the study are to identify and describe (1) the significant influences on women's considerations of the MODVOPPP professions as career choices; (2) the process by which MODVOPPP training and specialty selection takes place; and (3) the unique perspectives women may contribute to the training for and practice of these professions.

We are seeking information from you in connection with this contract. The contract is authorized under Section 513 of the Public Health Service Act to evaluate programs administered by the Public Health Service.

All information which would identify respondents will be treated confidentially. Neither the names of participating institutions nor the names and/or titles of any individuals will be identified in any written report, public presentation, or public conversations which result from or are a part of the study. Data given to HEW will be in aggregate form so that identities will not be disclosed. Institutions will be code named and individuals will be referred to by category in all documents and presentations. At the conclusion of the study URSA will erase all taped material and destroy all site visit reports and handwritten notes of the field interviews.

Disclosure of the information requested of you is strictly voluntary. This information is being obtained in an attempt to identify those aspects of the professionalization process in health professional schools which may tend to encourage or discourage women from successfully completing and utilizing their training. Individual and institutional identities will be deleted from all records by the contractor as soon as initial analysis has been completed. Therefore, the information collected will be available only in aggregate form for use by any interested parties including the Department of Health, Education and Welfare. If you choose not to participate in this study, you are free to do so with the full assurance that no adverse consequences will result.

The study's final report will be available in the spring of 1976. If you are interested in the study's findings and recommendations to HEW you should write or telephone the

Women's Action Program, Department of Health, Education, and Welfare
Room 3059, HEW North Building, 330 Independence Avenue, S.W.
Washington D.C. 20201

EXHIBIT E: SUMMARY OF INDIVIDUAL INTERVIEWS

		Administrator Interviews															Faculty Interviews								
	# of Schools	Deans, Presidents, Chancellors			Asst. or Assoc. Deans			Affirmative Action (1)			Other Admin. (2)			Total Admin.			Pre-Clinical Faculty			Clinical Faculty			Total Faculty		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Medicine	9	10	--	10	11	5	16	--	5(1)	5(1)	11	15	26	32	25	57	8	13	21	19	21	40	27	34	61
Osteo. Med.	2	3	--	3	4	--	4	--	--	--	4	1	5	11	1	12	5	--	5	4	6	10	9	6	15
Dentistry	5	5	--	5	13	--	13	--	--	--	1	4	5	19	4	23	5	3	8	16	5	21	21	8	29
Vet. Med.	2	1	--	1	4	--	4	--	1	1	3	2	5	8	3	11	2	2	4	9	5	14	11	7	18
Optometry	2	3	--	3	2	--	2	--	--	--	2	2	4	7	2	9	4	1	5	3	1	4	7	2	9
Podiatry	2	2	--	2	3	1	4	1	--	1	1	2	3	7	3	10	3	10	13	5	1	6	8	11	19
Pharmacy	3	3	--	3	6	--	6	--	--	--	5	6	11	14	6	20	4	3	7	5	4	9	10	7	17
Pub. Hlth. (5)	2	1	--	1	2	1	3	--	--	--	--	1	1	3	2	5	N/A	N/A	N/A	5	5	10	5	5	10
TOTALS	27	28	--	28	45	7	52	1	6	7	27	33	60	101	46	147	31	32	63	67	48	114	98	80	178

(1) Of the 5 Affirmative Action, 4 were university-wide and therefore covered, in three instances, dentistry, and in one instance, pharmacy, as well as medicine.

(2) Includes Registrars, Business Managers, Administrative Assistants, Directors of Special Programs, Centers, Institutes or Grants, Financial Aid Officers.

...Table continues on page A40.

FINAL REPORT: Volume I
CONTRACT: HEW OS-74-291
APPENDIX B

EXHIBIT E (CONTINUED)

Individual Student Interviews																		Intern & Resident Interviews											
1st Year			2nd Year			3rd Year			4th Year			Unknown Or "Other" Students			Total Individual Students (3)			Site Admin.			Interns & Residents			Total Admin., Interns & Residents			Total Respondents		
M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
6	21	27	4	13	17	2	9	11	1	5	6	2	13	15	15	61	76	3	1	4	9	11	20	12	12	24	86	132	218
3	3	6	1	2	3	2	4	6	--	1	1	--	--	--	6	10	16	← N/A →									26	17	43
1	7	8	5	9	14	1	--	1	2	7	9	4	1	5	13	24	37	1	--	1	--	2	2	1	2	3	54	38	92
5	4	9	2	5	7	--	4	4	--	2	2	--	1	1	7	16	23	1	--	1	2	3	5	3	3	6	29	29	58
--	4	4	1	5	6	3	2	5	1	5	6	--	--	--	5	16	21	← N/A →									19	20	39
--	1	1	--	2	2	1	2	3	4	2	6	--	--	--	5	7	12	1	--	1	3	--	3	4	--	4	24	21	45
--	1	1	--	5	5	1	7	8	1	2	3	6	7(4)	13(4)	8	22	30	← N/A →									32	35	66
6	7	13	--	--	--	--	--	--	--	--	--	--	--	--	6	7	13	1	--	1	2	4	6	3	4	7	17	18	35
21	48	69	13	41	54	10	28	38	9	24	33	12	22	34	65	163	228	7	1	8	16	20	36	23	21	44	287	310	597

(3) Male students were not a key respondent group in the study until after submission of the Interim Report at which time the study's focus was expanded to include them in greater numbers. The imbalance between male and female student interviews remains because URSA visited half of the schools in the study (14 of 27) prior to the Interim Report.

(4) Includes 1 fifth-year and 1 sixth-year student.

(5) Hospital Administration and Epidemiology faculty and students combined. Due to varying lengths of training programs, all Public Health students arbitrarily counted as first-year students.

EXHIBIT F

MODVOPPP GROUP INTERVIEW SUMMARY

	Male		Female		Mixed		Total	
	# of Groups	Estimated Average N=7	# of Groups	Estimated Average N=7	# of Groups	Estimated Average N=8	# of Groups	Estimated Total
Medicine	4	28	13	91	--	--	17	119
Osteo. Med.	3	21	3	21	1	8	7	50
Dentistry	1	7	8	56	1	8	10	71
Vet. Med.	--	--	5	35	3	24	8	59
Optometry	2	14	3	21	1	8	6	43
Podiatry	1	7	2	14	--	--	3	21
Pharmacy	2	14	6	42	1	8	9	64
Pub. Hlth.	1	7	1	7	--	--	2	14
TOTAL	14	98	41	287	7	56	62	441

Group interviews did not usually have stable participation from start to finish. Inevitably, some students left early or arrived late, depending on their schedules. Consequently, the "Estimated Average N" reflects the core N and does not include the transient students in these groups.

Many of both the core and the transient members of these groups also participated in individual interviews. Many did not. As we did not keep "attendance records" of group participants, we have no way of knowing the unduplicated count of students who participated in the study either as individuals, group interview participants, or both.

EXHIBIT G

INTERN AND RESIDENT INTERVIEWS

1. Medicine: Site Selection

The criteria developed for selecting hospital training sites for interviews with interns and residents out of the many hospitals with AMA (American Medical Association)-approved internships and residencies included:

- presence of women interns and residents;
- type of service (acute care, long-term care);
- type of control (church, non-profit corporation, public, state or federal, other);
- size (number of beds); and
- emphasis (research, medical center, "regular" general hospital, pre-paid.

Hospitals were selected to exhibit the broadest variety of characteristics. Four primary sites were selected, with secondary sites utilized occasionally because of the unique features they display (Site A is a military hospital which rarely has women in postgraduate programs; and Site B is a large city hospital).

TABLE 1

SITES VISITED

	ACUTE CARE	LONG TERM	CHURCH	NON-PROFIT	PUBLIC	STATE OR FEDERAL	OTHER	NUMBER OF BEDS (ROUNDED TO 10s)	RESEARCH	MEDICAL CENTER	GENERAL	PRE-PAID	NUMBER OF WOMEN I & R
Site 1	X	X			X			560	X	X			10
Site 2	X			X				260		X	X		8
Site 3*	X	X		X				550			X	X	20
Site 4	X	X	X					440			X		15
Secondary Sites													
Site A	X	X				X		530			X		1
Site B	X						X	820	X		X		Unknown

Site 3 includes two hospitals under the aegis of the same non-profit corporation.

2. Summary of Interviews: Medicine

TABLE 2

MEDICINE INTERVIEWS BY SITE

SITES	ADMINISTRATION			INTERNS			RESIDENTS			TOTAL INTERNS AND RESIDENTS			TOTAL INTERVIEWS
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	
#1	1	1	2	-	-	-	3	3	6	3	3	6	8
#2	1	-	1	-	2	2	1	3	4	1	5	6	7
#3	-	-	-	-	-	-	2	-	2	2	-	2	2
#4	1	-	1	-	2	2	1	1	2	1	3	4	5
A	-	-	-	-	-	-	1	-	1	1	-	1	1
B	-	-	-	-	-	-	1	-	1	1	-	1	1
TOTAL	3	1	4	-	4	4	9	7	16	9	11	20	24

Medicine intern and resident interviews covered the following specialties:

MEN	WOMEN
Orthopedic Surgery	Pathology
Psychiatry	Pediatrics (includes a residency split by two women)
Internal Medicine	Neurology
Pediatrics	Psychiatry
	Internal Medicine

2a. Summary of Interviews: Dentistry

Dentistry post-graduate students and administrators: Interviews were conducted at one site. Dental specialties covered are periodontics and orthodontics.

2b. Summary of Interviews: Veterinary Medicine

Interviews of veterinary medicine interns and residents were also conducted at one site. The interviews included one intern and five residents in the following specialty areas: Dermatology, Radiology, Anesthesiology, Small Animal Medicine and Large Animal Medicine.

2c. Summary of Interviews: Podiatry

There are a very limited number of podiatric residency positions available in the country. While we are aware of one woman resident, we were unable to contact her to arrange an interview. We spoke with three male residents and a male administrator.

2d. Summary of Interviews: Public Health

Public health interviews were conducted with hospital administration students at various residency sites including community hospitals and health planning agencies.

TABLE 3

SUMMARY OF INTERVIEWS

Intern & Resident Interviews									
	Site Admin.			Interns & Residents			Total Admin., Interns & Residents		
	M	F	T	M	F	T	M	F	T
Medicine	3	1	4	9	11	20	12	12	24
Osteo. Med.	N/A								
Dentistry	1	--	1	--	2	2	1	2	3
Vet. Med.	1	--	1	2	3	5	3	3	6
Optometry	N/A								
Podiatry	1	--	1	3	--	3		--	4
Pharmacy	N/A								
Pub. Hlth. (5)	1	--	1	2	4	6	3	4	7
TOTALS	7	1	8	16	20	36	23	21	44

EXHIBIT H

MODVOPPP DATA COLLECTION INSTRUMENTS

GUIDELINES FOR INTERVIEWS WITH INTERNS AND RESIDENTS

INTERVIEW INSTRUCTIONS

The wording you use to raise various topics and the sequence in which you cover them should be dictated by the flow of the conversation. Your objectives in these interviews should be to let them proceed as naturally as possible with your role being unobtrusive and with maximum opportunity for the respondent to initiate and engage in topics of conversation related to the study which we had not anticipated and have not covered in the following pages. Remember to request frequent examples of specific experiences, policies, situations, etc., which illustrate a general point the respondent makes in the discussion. Finally, remember to request permission to tape-record the discussion and to give the statement of confidentiality to the respondent.[1]

SUMMARY OF INTERN/RESIDENT INTERVIEW GUIDELINES

I. Background Information

II. Preparation for MODVOPPP Training

III. Application Process

IV. Appointment (at this Institution)

V. Financing

VI. Academic Process and Training

VII. Specialty Selection

VIII. Client Relations

IX. Social Contacts and Collegial Opportunities

X. Accessibility of Professional Women

XI. Areas of Possible Sex-Based Differences in Experiences at this Institutions

XII. An Overview of Women's Experiences in Entering a MODVOPPP Field

XIII. Summary Comparison of Men/Women in Profession

XIV. Summary of Solution Recommendations

XV. Recruitment and/or Counselling (Ask only if have time)

---

[1] (Note): During course of study, new federal regulations regarding Confidentiality and Protection of Human Subjects changed procedures from reading statements to handing out copies to each respondent.

MODVOPPP FIELD INSTRUMENTS

INDIVIDUAL MEN AND WOMEN INTERNS/RESIDENTS

INTERVIEW GUIDELINES

I. BACKGROUND INFORMATION

- Age
- Marital status
- Current living situation
- Number of children being cared for
- (If different) number of dependents
- Father's occupation
- Father's education
- Mother's occupation
- Mother's education
- Number of siblings older, younger, sex
- Ethnicity
- Religious background
- Where brought up (part of country, urban/rural)
- Undergraduate college attended
- Undergraduate field
- Undergraduate GPA and Professional Test scores
- Lapse of time between college graduation and entering MODVOPPP institution, how time was spent
- Professional institution attended
- Professional school GPA and National Board scores
- Lapse of time between professional school and beginning internship/residency, how time was spent

II. PREPARATION FOR MODVOPPP TRAINING

- Reasons for choosing to enter this field
- Age when first considered this field
- Age when decision actually was made
- Other professions considered
- Original introduction to this field (i.e., how became aware of field)
- Positive and negative role models
- People with whom decision to enter field was discussed
- Relative, close family or personal friends in profession

II. PREPARATION FOR MODVOPPP TRAINING, cont.

- Sources of encouragement for entering
- Sources of discouragement for entering
- Reactions from family, friends, teachers, school counselors, others on making this choice
- Career and life choices made by closest friends
- Ramifications of making this choice (e.g., any options foregone such as postponing marriage, children, etc.)
- Special pre-MODVOPPP course of study taken to prepare for entrance
- Prior professional work experience

III. APPLICATION PROCESS

- Did you participate in a centralized intern/resident placement program?
- Number of positions applied to, which ones
- What factors influenced the choices
- What are the "choice" hospitals, programs
- Determinants of choice hospitals, programs, e.g., location, type of hospital, salary, etc.
- Whether got first choice program; if not, which choice
- Number of positions interviewed for, which ones
- In your opinion, what factors influenced acceptance, what factors influenced rejection
- Any significant differences in the application process at institutions--particularly between accepting and rejecting institutions

IV. APPOINTMENT (at this institution)

- What kind of recommendations required
    - from whom
    - has the intern/resident seen their recommendations
- Description of interviews
    - how many
    - approximately how long
    - with whom
    - content of interview
    - tone of the interview
- Whether other house staff report that interviews were fairly consistent in tone and questions asked for all applicants

V. FINANCING

- Salary level
- Negotiated or fixed
- Variations in salaries for interns/residents
  - by individual
  - by marital status
  - by specialty
  - by type of internship
- Is stipend adequate; if not, how do you supplement it

VI. ACADEMIC PROCESS AND TRAINING

- Existence of flexibility in program to accommodate students with special needs
  - ability to extend course over longer period of time (flexible internships, longer residencies)
  - feasibility of taking leaves of absence
  - special concern given to staff with families
- Whether there is a formal orientation to institution program
  - what is covered
  - who delivers
- Assessment of academic process and training
  - omission of essential training
  - characteristics of good/poor instructors/preceptors
  - examples of good/poor instructors/preceptors
- Factors relating to evaluation of performance of clinical work
  - explicit criteria used in evaluation
  - implicit criteria used in evaluation
  - persons responsible for making judgements
  - situations allowing for wide discretion when evaluating performance
  - feelings about evaluations received

VII. SPECIALTY SELECTION

- Whether a specialty has been chosen
  - what it is
- Faculty members significant in selection
- Others instrumental in specialty selection
- Reasons for selecting particular specialty
- Other specialties considered
- Reasons for eliminating other specialties
- Any problems in having access to desired specialty, specialty training opportunities

VIII. CLIENT RELATIONS

- Descriptions of types of responses to a woman practitioner
  - effect of gender
  - effect of age
  - type of situation

IX. SOCIAL CONTACTS AND COLLEGIAL OPPORTUNITIES

- Amount of social life centered around other house staff
- Amount of studying done with other house staff
- Whether other staff have been supportive and in what ways
- Extent to which men and women staff interact at this institution
  - with one another
  - with instructors
  - with students, if any in training in hospital
  - types of interaction (social, in class, in lab, etc.)
  - frequency, intensity
- Dissatisfactions with other staff
- Contact with male, female faculty
  - possibilities for informal contact
  - whether contact is adequate
  - suggestions for further contact desirable to intern/resident
- Informal grapevine for easy assimilation at this institution
  - advice on what persons to avoid or seek out
  - sources for learning "the ropes"

X. ACCESSIBILITY OF PROFESSIONAL WOMEN

- Women who have taught the respondent
- Courses taught by these women
- Other contact with professional women at this institution
- Number of women administrators
- Whether there are women advisors or counselors
- Existence of an organized women's caucus or committee concerned with the status of women at the institution
    - if so, who comprises membership
    - whether respondent belongs
- Existence of special counselling services addressing the particular needs of women
    - if yes, whether they are adequate
    - whether respondent has taken advantage of such services
    - for what purposes respondent, other women seek special counselling

XI. AREAS OF POSSIBLE SEX-BASED DIFFERENCES IN EXPERIENCES AT THIS INSTITUTION

- Whether hospital appears to have a special policy to recruit minorities and/or women house staff
- Current posture toward women by the administration
- Changes that have taken or are taking place which affect the status of women at this institution
- Amount of support for effecting change, improving conditions for women at this institution
- Instances of possible differential treatment given men, women, if any
- Recognition by the institution of particular problems women face during their training
- Steps taken by the administration to accommodate women's needs beyond the training institution
    - involvement in adequate provision of facilities for women at other training sites, if any
    - concern with physical safety for women during various phases in their training
- Specific instances, if any, of overt discrimination observed or personally experienced
- Awareness of instances, if any, of sex stereotyping or generalizations of female behavior or attitudes

XI. AREAS OF POSSIBLE SEX-BASED DIFFERENCES IN EXPERIENCES, cont.

- Instances of discomfort suffered in classes, on rounds
  - comments by male faculty
  - attitudes toward women patients
  - differential questioning of men, women
  - neglect during rounds, seminars
  - failure to be included in activities open to men
  - prevention from participation in certain types of exams, treatment procedures
  - exclusion from informal seminars or discussions with male staff
- Adequacy of facilities provided for women at this institution
  - housing
  - recreational
  - counselling
  - changing rooms and lavatories
  - child care provisions
  - family planning and ob/gyn services
  - medical facilities
- How this institution compares with others
- How does experience as an Intern/Resident compare with, differ from
  - what you expected
  - school experience

XII. AN OVERVIEW OF WOMEN'S EXPERIENCES IN ENTERING A MODVOPPP FIELD

- Opinions, reasons for so few women in the profession
- Opinions, reasons that more women are not at this institution
- Opinions, reasons for so few women in the applicant pool
- Aspects of the profession thought to encourage or discourage women from entering
- Thoughts on what women look for in a profession and whether this is changing
- Special difficulties a woman faces in addition to the ones normally associated with MODVOPPP training
- Special assets women as women bring to profession
- Thoughts on how (other) women view their MODVOPPP experience
- Thoughts on (other) women's explanations for why so few women are in this field

XII. AN OVERVIEW OF WOMEN'S EXPERIENCES IN ENTERING A MODVOPPP FIELD, cont.

- Information about (other) women who abandoned plans to pursue a MODVOPPP career/specialty and reasons for doing so
- Thoughts on why women select different fields of specialization from male colleagues
- Awareness of, identification with women's movement

XIII. SUMMARY COMPARISON OF MEN/WOMEN IN PROFESSION

- Opinions regarding differences, if any, between men and women
  - in ways treat, are treated by patients
  - in ways approach practice
  - in expectations for profession--why they chose this profession
  - treat, are treated by other house staff--nurses, physicians, administrators, etc.
- Opinion regarding differences, if any, between men and women in
  - process by which profession selection--decision made
  - in school recruitment, application
  - in admissions experiences
  - in school training experiences
  - in intern, resident (specialty) recruitment selection experiences
  - in professional practice
  - in attrition in school, in intern and residency programs, in practice

XIV. SUMMARY OF SOLUTION RECOMMENDATIONS

- Thoughts regarding effective means for interesting, recruiting women into profession
- Thoughts regarding effective means for addressing stated women's needs, problems
- Thoughts regarding ways to maximize stated women's contributions, assets to profession

XV. RECRUITMENT AND/OR COUNSELLING (Ask only if have time)

- Awareness of recruitment efforts in this field
- Special efforts made to recruit students
    - what they are
    - by whom they are made
- Most effective means of recruiting
    - written materials
    - special techniques
- Special efforts to recruit women applicants
    - whether such efforts took place
    - if so, who did the recruiting
    - where the recruiting was done
    - content of the recruitment effort
    - effectiveness of the recruitment effort
- Suggestions for ways to recruit more women
- Any special efforts to counsel women to enter this field
- Whether career counselling was received during high school, college
    - if so, by whom it was done

EXHIBIT I

MODVOPPP DATA ANALYSIS

1. Guidelines and Instructions
2. Institutions Analysis & Report
    a. Summary Data Forms
    b. Institutional Analysis Outline
3. Coding Categories

EXHIBIT I 1

MODVOPPP DATA ANALYSIS GUIDELINES AND INSTRUCTIONS

OBJECTIVES AND OVERALL APPROACH

Our objective in conducting an analysis of the field materials and interviews we have gathered in on-site visits to MODVOPPP schools is to understand the professional, institutional (school), and interpersonal environment in which women go through and experience professional training. We also want to understand as much as we can about the factors which influence women's decision to consider professional training in one of the MODVOPPPs and the factors which influence other specific career decisions such as choice of specialty, type of practice, and so on. In short, we want to analyze our data using the professional training model outlined in the proposal to HEW as the (approximately) linear sequence a woman follows through the professional training process and related decision-making points in the context of an analysis of the impact of the particular profession involved and, within each profession, the particular school(s) involved.

This analytic approach to our data essentially involves and can best be described and understood as a school-by-school case study. It involves (1) understanding the key formal and informal organizational, decision-making, and power relationships within each institution as these affect and have impact on the institution's policies, programs, services, facilities, and students; (2) understanding the scope, content, procedures, and eligibility requirements involved in various of the institution's programs (both academic and non-academic support programs) which are directed at and/or specifically involved with students; and (3) understanding the points of view different and key groups take on questions of central interest to this study (such as, for instance, what attracts women to the profession, what characteristics the profession is looking for in students, how the profession is changing and the impact of such changes on type of practitioner desired, etc.).

This means we must try to understand and report how deans, other administrators, male and female faculty, and male and female students see and comment on these issues and where the similarities and differences in their points of view occur. Finally, (4) it involves using what we know about the organization, its programs, and the attitudes and opinions of various of its groups to analyze how these factors operate to affect women's experiences in that institution and the impact which women's presence has/may have in that institution and in that profession.

Below is a description of the procedures and data analysis steps which should be observed in conducting an analysis of each institution. That is followed by a set of forms and guidelines which are the basis for writing up a report and analysis of each MODVOPPP institution. Both are intended to facilitate an institutional approach to analysis of our data and a resulting ability to understand women's experiences in the context of the profession and the professional training school. This approach should also facilitate a comparative review and analysis of all of the eight MODVOPPPs.

DATA REDUCTION AND ANALYSIS STEPS AND PROCEDURES

1. LISTEN TO TAPES, REVIEW NOTES AND MATERIALS BY SCHOOL. DO EACH SCHOOL FULLY BEFORE GOING TO NEXT SCHOOL; DO ALL SCHOOLS IN PROFESSION BEFORE CHANGING PROFESSIONS.

2. REVIEW MATERIALS, LISTEN TO TAPES IN FOLLOWING ORDER:

   A. Written Materials

      1. Written information about school's history, structure and organization, size, curriculum, special arrangements with other institutions, etc.

      2. Written information about role and status of women and minorities at the school, e.g., existence and history of special committees, law suits, programs (recruiting, counseling, etc.)

      3. Available statistics describing composition of faculty, applicants to students in school (from Attachment A and for addition to Attachment A)

   B. Tapes and Interviews

      As you listen to each of the taped interviews and/or read interview notes, partial or full transcriptions, make your own notes of unusually pertinent and important issues, statements, experiences, points of view, and so on and include those as part of the individual interview analysis packet. Interviews should be analyzed in the following order for maximum utility in generating a school-by-school institutional analysis which facilitates and permits comparative points of view and experiences among different interviewee groups; among schools; across professions.

      1. Administrators

         a. Provost, Chancellor, President, etc. (if available)

         b. Dean of School

         c. Other Deans, e.g., Dean of Students, Associate Dean of Faculty Affairs, etc.

         d. Functional Administrators, e.g.

            1) Director of Research

            2) Director of Clinical and Continuing Education

            3) Director of Admissions

4) Financial Aid Officer

5) Affirmative Action Officer

2. Faculty

a. Pre-clinical with priority given to Chairpersons of Departments; members or Chairpersons of key committees such as Admissions, Recruiting, etc.; people identified as particularly sympathetic and responsive to student needs; people identified as the opposite.

1) Males first

2) Females second

B. Clinical with priorities as above and in order of males, females

The purpose of dealing first with the men is to get a sense of the tone and the (presumed) dominant point of view and perspective in the institution. Note that the same sequence is suggested for student interviews for the same reason.

C. Student Group Interviews

1. Male Group Interviews

2. Female Group Interviews

3. Mixed Group Interviews

The purpose of reviewing group interviews prior to individual interviews is to first obtain a sense of the scope of issues students raise and some impressions regarding which seem to be of most relevance to them as a group.

D. Individual Student Interviews

1. Men--in order of year in school beginning with first year and ending with last.

2. Women--in order of year in school beginning with first year and ending with last.

OUTLINE FOR INDIVIDUAL SCHOOL ANALYSIS

Based on your review of written materials and interviews, write a summary report for the institution using the OUTLINE FOR INDIVIDUAL SCHOOL ANALYSIS and its various Attachments and other forms. The OUTLINE is a freestanding packet which follows. Be guided by the following:

- Use code name in text to mask identity of institution
- Use titles of people, not names, to mask identity and also give reader a sense of their function and role
- Spell out any abbreviations, acronyms the first time followed by the abbreviation/acronym in parentheses (e.g., Urban and Rural Systems Associates (URSA); thereafter use URSA).
- Cover ALL sections of the analysis outline even if there is no information available; in that case, note "NA".
- Do write as if the reader knows absolutely nothing about the school, its history, actors, politics, incidents, etc.--that is, do not make reference to things a stranger to the school wouldn't know without explaining something about them--e.g., the student strike at ____.

OTHER PRODUCTS OF YOUR EFFORT

The final product of your effort will be an analysis of each school written against the DATA ANALYSIS GUIDELINES. Intermediate products will include materials generated as you listen to individual tapes and/or read interview notes and tape transcriptions. Specifically, each interview you analyze should result in a packet as follows:

1. Interview Face Sheet (for students only).
2. Your notes of significant parts of the interview.
3. The full or partial tape transcription (if available)
4. The handwritten notes of the interview if a tape was not done.

These individual packets will be filed in their appropriate spots in the files and not attached to the final write-up of the school.

Remember, too, that you should still be generating materials for the various shoe-boxes including:

1. Data Gaps
2. Findings/Insights
3. Possible (policy) Recommendations
4. Hypotheses/Future Research Suggestions (for HEW, not our fall work).
5. Fall Reaearch Suggestions
6. Tape Collage Segments

Do these on individual 3 X 5 cards and use the tape collage 1/2 sheet form which was attached to the tape analysis memo of August 11 for citing segments of tapes useful and attractive for the tape collage.

EXHIBIT I 2A

MODVOPPP DATA ANALYSIS
MODVOPPP SCHOOL/INSTITUTION ANALYSIS & REPORT

PREPARED BY:______________________________ DATE:______________

I. INSTITUTIONAL SUMMARY DATA AND HISTORY

A.

INSTITUTION:__________________________ LOCATION:______________ CODE:_____

URBAN___ RURAL___ PUBLIC_______ PRIVATE_____ FREESTANDING_____ UNIV. AFFIL._____

ORIENTATION: RESEARCH_____ CLINICAL____ UNIV. CAMPUS____ MEDICAL CENTER____NEITHER____

TUITION______ AVERAGE TUITION FOR PROFESSION/HIGH/LOW__________/______/______

DATE FOUNDED:________ POPULATION OF UNIVERSITY________ POPULATION OF SCHOOL________

CURRICULUM LIST (List alphabetically and/or describe)

DEPARTMENTS:

SPECIALITIES OFFERED:

DEGREES GRANTED AND NUMBER OF YEARS REQUIRED FOR EACH:

FACILITIES: (Describe)

SCHOOL CLINICAL OR RESEARCH FACILITIES:

AFFILIATED CLINICAL OR RESEARCH FACILITIES:

B. INSTITUTIONAL "GESTALT"

(Note and discuss the school's "atmosphere"; any special features or salient issues; and characteristics for which it is particularly noted.)

C. INSTITUTIONAL HISTORY

Here note and describe any events in the institution's history which have particular relevance for, bearing on role and status of women (and/or minorities) in the institution.

ATTACHMENTS: A: SCHOOL STATISTICS (SEE ATTACHMENTS)
B: LIST (BY TITLE) OF TAPES/NOTES OF INTERVIEWS AT THIS SCHOOL (SEE ATTACHMENTS)

CONTRACT: HEW OS-74-291
INSTITUTION CODE: ____________ CODER/TEAM LEADER: __________ A61

ATTACHMENT A

URSA Urban and Rural Systems Associates
Pier 1-1/2, San Francisco, California 94111
415 398-2040

EXPLORATORY STUDY OF WOMEN IN THE HEALTH PROFESSIONS SCHOOLS

1. FACULTY POPULATION

PRECLINICAL	# of Male	# of Male With Tenure	# of Female	# of Female With Tenure
1) Professor				
2) Associate Professor				
3) Assistant Professor				
4) Instructor				
5) Lecturer				
CLINICAL				
1) Professor				
2) Associate Professor				
3) Assistant Professor				
4) Instructor				
5) Lecturer				

NOTE: Please indicate with parentheses () the number of acting appointments in a given rank.

2. APPLICANTS AND FIRST YEAR ENROLLMENT, LAST FIVE YEARS

ACADEMIC YEAR	# of Completed Applications			# of Applicants Interviewed			# of Accepted Applicants			First Year Enrollment		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
1) 1975-76*												
2) 1974-75												
3) 1973-74												
4) 1972-73												
5) 1971-72												

Page 1 of 3

INSTITUTION CODE:____________ CODER/TEAM LEADER______________

3. UNDERGRADUATE GPA'S AND PROFESSIONAL APTITUDE TEST SCORES FOR MOST RECENT ENTERING CLASS

	APPLICANTS			ENTERING CLASS		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
AVERAGE UNDERGRAD. GPA						
AVERAGE TEST SCORES OR % ILE RANKING						

4. CURRENT ENROLLMENT BY YEAR-IN-SCHOOL

	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	OTHER (PLEASE SPECIFY)
MALE					
FEMALE					
TOTAL					

5. ATTRITION AND GRADUATING CLASS

ACADEMIC YEAR	# GRADUATING MEN	WOMEN	TOTAL	# WHO BEGAN TRAINING MEN	WOMEN	TOTAL
1974 - 75						
1973 - 74						
1972 - 73						
1971 - 72						

Page 2 of 3

INSTITUTION CODE:______________ CODE/TEAM LEADER______________

6. SPECIALTY SELECTION

Please list the specialties available to students, and the numbers of students each year who have selected a particular field.

SPECIALTIES	1974-75		1973-74		1972-73		1971-72	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
1. GENERAL PRACTICE								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

CONTRACT: HEW OS-74-291

A64

MODVOPPP SCHOOL/INSTITUTION ANALYSIS & REPORT

ATTACHMENT B

74-4: FIELD VISIT

INTERVIEW SUMMARY FORM/TEAM

Page ____ of ____

Coder ________

School Code: ______

Visit Dates: __________

Field Team: ________ (Leader)

____

____

____

____

(Attach Additional Sheets if necessary; and, if so, summarize total Interviews by Category and by Sex.)

Respondents	*Interviewer*	*Male*	*Female*	*Notes*	*Tape (note by #)*	*Date of full(F) or partial(P) transcript*	*Date of Analysis; initials of coder*	*Tape(T) or Notes(N) Unintelligible(U)*
1. Administrators (list by title, initials)								
Subtotal	X					X	X	
2. Faculty (list by pre-clinical/clinical, initials)								
Subtotal	X					X	X	
3. Students (list by year-in-school, initials)								
Subtotal	X					X	X	
4. Group sessions (list by year-in-school and sex)								
Subtotal	X					X	X	
TOTAL								

(List of Materials--over)

EXHIBIT I 2B

MODVOPPP DATA ANALYSIS
OUTLINE FOR INDIVIDUAL SCHOOL ANALYSIS

The following are the major sections involved in developing an analysis and write-up of each school. Each section is further detailed below:

I. Institutional Summary Data and History (including Attachment A, Statistics), Attachment B...Interviews)

II. How the School is Organized

III. The Profession and the School

IV. Views About Women, Women in the Profession

V. Men's and Women's Experiences in the Training Process

VI. CAP Model Refinements, Other Learnings

VII. New, Interesting, and Missing Items

I. INSTITUTIONAL SUMMARY DATA AND HISTORY

Use MODVOPPP SCHOOL/INSTITUTION ANALYSIS & REPORT form attached at back of this document, including Attachments A & B.

II. HOW SCHOOL IS ORGANIZED

A. Recruitment

B. Admissions

C. Pre-Clinical Training

D. Clinical Training

E. Relationship to "Practical"/Grad Training--Preceptorships, Intern and Residency Systems, Specialty Selection

F. Support Services

1. Financial Aid

2. Job Placement (During and After Training)

3. Housing
4. Counseling
    a. Academic and Professional
    b. Personal
5. Health Services
6. Social and Recreational
7. Facilities and Equipment
8. Special for Women
    a. Childcare
    b. Security or Escort Services

G. Affirmative Action

--How school defines; what and who is included

H. Women's Groups

--Which, who, what kind

I. Informal, Formal Power Structure

1. Role and powers of Dean vis-a-vis faculty, students, alumni, trustees and attitudes toward students in general
2. Role and powers of faculty vis-a-vis above groups--organization and types of faculty committees; --Attitudes towards students in general
3. Student organizations, access to decision structures

III. THE PROFESSION AND THE SCHOOL

(Discuss as seen by Deans and administrators, faculty, if different, male students, female students.)

A. Characteristics of the Profession

1. Attractive Features
2. Undesirable Features
3. Standing Compared to Other Professions

4. Trends, Changes, Future Directions

5. Implications of the Changes for Type of Person Needed in Profession--for Women

B. Characteristics of a Good "X"

C. What Characteristics Does School Recruit for in its Students--What Does it Try to Turn Students Into and How Does it do This?

D. How Does School See its Role in Relationship, its Responsibility to the Profession.

IV. VIEWS ABOUT WOMEN, WOMEN IN THE PROFESSION

A. Reasons for Historical Absence of Women in Profession (Refer to Coding Categories, Item 2)

B. Reasons Women are in and/or are Starting to Apply to Profession (Refer to Coding Categories, Item 3)

C. Why Women Not Suited to Profession (If Not Covered in A & B above)

D. Impact of Women on the Profession

   1. Positive--e.g., nurturant

   2. Negative--e.g., take up men's spaces, work for low wages, etc., get special treatment in admissions

E. Stereotypes, Myths, Impressions Regarding Women

   1. As Patients

   2. Students

   3. Women in General

V. MEN'S AND WOMEN'S EXPERIENCES IN THE TRAINING PROCESS

A. Biography of Entry into Profession

   1. E.g., Influences (Positive and Negative) of Friends, Parents, Counselors, Teachers (Coding Categories, Item 1)

   2. Features of Profession Which Attract/Repel

   3. Any Special Recruiting Efforts

4. Other Professions, Other Schools
5. Admissions Experiences

B. Experiences With School Procedures that are Supportive or Not
   1. Financial Aid
   2. Job Placement (During and After Training)
   3. Housing
   4. Counseling
      a. Academic and Professional
      b. Personal
   5. Health Services
   6. Social and Recreational
   7. Facilities and Equipment
   8. Special for Women
      a. Childcare
      b. Security or Escort Service

C. Formal, Informal Learning Network and Processes--How Do Students Learn What They Learn?

D. Problems Experienced in Training (Non-Discrimination Specific) (Refer to Coding Categories, Items 7, 8, and 9)
--e.g.,What happens to:
   1. Women
   2. Men
   3. Comparison of Women and Men

E. Discrimination
   1. Women's Experiences of:
      a. Manifestations (Coding Categories, Items 4 and 5)
      b. Impact (Coding Categories, Item 6)
      c. Responses--individual, organized and collective (Coding Categories, Item 6)
   2. Men's Views and Assessment of Women's Experiences

F. Experience of Changes Students Are Put Through as a Result of Socialization.

G. Other Experiences (Not Problem Experiences)

VI. CAP MODEL REFINEMENTS, OTHER LEARNINGS BASED ON ANALYSIS OF THIS SCHOOL--SPECIFICALLY:

A. Any New CAP Points/Decisions

B. Any New Influences on the Decisions at CAP Points

C. Importance of Any CAP Point Over any Other in Terms of Women's Channelings, Tracking, etc.

VII. WHAT ELSE IS NEW? MISSING?

EXHIBIT I 3

MODVOPPP DATA ANALYSIS
CODING CATEGORIES

1. Encouragements, Discouragements in choice of profession, application to professional school

    A. Mother
    B. Father
    C. Siblings F/M
    D. Grandparents F/M
    E. Own close friends F/M
    F. Parent's close friends F/M
    G. Family Practitioner F/M
    H. Spouse
    I. High school or College counsellor(s) F/M
    J. High school or college teacher(s) F/M
    K. Professional school admissions people, procedures F/M
    L. Media
    M. Others

2. Reasons for absence of women in the profession

    A. Discrimination
    B. Women have been in the professions
    C. Don't know; never thought about it
    D. Inherent characteristics of professions/women (Note which way phrased)
        1. scientific background and abilities
        2. Technical/Mechanical
        3. Physical strength/stamina
        4. Status and image
        5. Priorities and commitment
        6. Emotional make-up
        7. Length of training
        8. Cost of training
        9. Risk taking/entrepreneurial
        10. Flexible work opportunities/time control
        11. "Male only" profession
    E. Traditional role of women didn't include work

3. Reasons women are in the profession and/or are starting to apply.

    A. Broad scale social changes
        1. changing role of women
        2. Birth control
        3. Barriers (discrimination) being eliminated
        4. Womens lib
        5. Federal pressures/anti-discrimination pressures
    B. Changes in the health delivery system
    C. Characteristics of the profession
        1. Structural
        2. Working conditions
        3. Techincal

4. Occurrences of sex discrimination

A. Says there is none
B. Yes there is
C. Yes it's getting worse-for me (as I go through school)
D. Yes it's getting worse for women
E. Says there is but hasn't happned to me (Note exact response)
F. Says there is but usually not intentional
G. Says there is but things are getting better for women
H. Experienced in high school and/or college counselling
I. Experienced in admissions interviews
J. Experienced or perceives in obtaining financial aid
K. Perceives in formal curriculum and materials
L. Perceives or experienced in informal curriculum
M. Perceives or experienced in school support services
N. Perceives or experienced in school facilites
O. Experienced in considering, making decisions re: specialty selection
P. Experienced and/or perceives in informal, formal policies
Q. Experienced and/or perceives in informal, formal procedures
R. Student/student relations
S. Student/faculty relationships
T. Other

5. Discrimination: What, Who, Where

What
A. Spotlighting
B. Invisible treatment
C. Grouping women
D. Overhelping
E. Excluding from information
F. Excluding from practical experience opportunities
G. Excluding from social and recreational opportunities
H. Setting up anti-female coalitions
I. Using physical contact "paternalistically"
J. Using physical contact as a "put-down"
K. Teasing
L. Practical jokes
M. Sexist jokes
N. Anti-female remarks and comments
O. Using different standards for grading or evaluating work
P. Anti-female "Patient" remarks, and comments
Q. Other
Who
M/F = Faculty S = Male student A = Administrators
C = Clinicians P = Patients (Clients)
Where
Any mention of settings?
Classroom, lab, rounds, professor's office, informal social.

6. Cost of discrimination to women: Impact on women and their responses to it.

A. Feel unwanted, unwelcome
B. Lose confidence in self, own judgement, skills
C. Inefficient expenditures of energy in handling anger, hurt
D. Time and energy loss in choosing which battles to fight
E. Managing hurt, anger by distancing self in order to control
F. "Real" loss in class absenteeism
G. "Real" Loss in dropping out
H. Lessened exposure to learning as function of physical facilities, colleague relationships
I. Other (describe)
J. Admissions easier for women
K. More teaching attention
L. Can use "feminity to get special help, etc.
M. "Tracking" specialty choices
N. Loss of commitment or motivation
O. Not speaking up in class
P. Not putting self-forward in class, clinic lab etc., to practice experiment

7. Professional socialization process: Consequences for women and men

A. Do not perceive any change in self, others
B. Perceive and/or experience positive change in self, others
C. Perceive and/or experience negative change in self, others
D. Express concern about ability to "survive" process
E. Express satisfaction that have "survived" process
F. Other (describe)

8. Problems men and women commonly experience, perceive, comment on: Summary

A. Insufficient time for people - friends, family, etc.
B. Insufficient time for personal hobbies, interests
C. Feelings of guilt towards kids, spouse, friends, etc. due shortage of time
D. Logistics problems in managing profession, marriage, children, etc.
E. Financial problems
F. Problems in being out of traditional roles - femininity, status
G. Problems of social relationships - Isolation, dating, students wives, etc.
H. Problems of managing feelings (anger, hurt, etc.)
I. Others' questioning of motives for being in professional school
J. Problem of "professional pairs"
K. Use of "myths", stereotypes by deans, others as justification for limiting or denying access to profession, certain specialities
L. Professional relationships with faculty, clients, patients, etc.
M. Lack of supportive facilities (lounges, day care, changing rooms)
N. Other

Described as problem for self, for others of the same sex, for others of other sex, deny, not mentioned?

9. Roles models (in schools, hospitals, the profession generally)

   A. None
   B. Too few
   C. Unattainable standards such as the "superwoman"
   D. Unacceptable such as too masculine, too bitter and angry, etc.
   E. Available and acceptable
   F. Unnecessary, unimportant
   G. Other (Describe):

10. Sources of, access to financial aid

   A. Has free money (e.g. gift, grant, or scholarship which does not require repayment) and it was easy to obtain (did not involve much paperwork, hassle, etc.)
   B. Has free money but it was difficult to obtain
   C. Has encumbered money -- that is, it must be repaid in money, in time or service, etc. -- and it was easy to obtain.
   D. Has encumbered money and it was difficult to obtain
   E. Does not have adequate funds
   F. Is heavily in debt
   G. School - distributed jobs
   H. Sexism in official application process
   I. Sexism in informal application process
   J. Other

Note sources: Own earnings, savings; parents; other friends and relatives; school, school/federal; other institutions; spouse.

11. Women bring something unique to the profession

   A. Bring "balance" to overly technical, scientific approach
   B. Concern for healing rather than money, status, power,prestige
   C. Understand need for fundamental changes in health care delivery system
   D. Are more informative, communicative with patients/clients
   E. See role as "technical consultant" helping patient manage illness rather than functioning as "authority"
   F. Sensitivity toward people, nurturing, expressiveness "cluster"
   G. Being in the profession for women patients unique understanding of women's health needs and problems.
   H. Other

APPENDIX C

SUMMARY OF STUDENT GROUP INTERVIEW ISSUES REGARDING PROFESSIONAL TRAINING

INTRODUCTION

URSA used two primary techniques for interviewing students about their professional training experiences in general and about the problems they encounter in gaining access to and pursuing professional training in particular. Each produced a different set of issues and different emphases.

URSA adapted a planning technique known as the Delbecq Nominal Group Process into a form of group interview which we used to surface from groups of students a broad spectrum of problems and issues they encounter in professional training. The groups were small--typically numbering less than twelve--and they included all female groups, mixed male/female groups, and all male groups. The group interviews gave us insights into which of the problems most group members shared, which seemed to present the greatest obstacles in professional training, and which are controversial.

URSA also conducted a series of individual one-on-one interviews with male and female students. The individual interviews often touched on problems and issues not raised in the group interviews because they might be considered "too personal", because they needed direct probes and encouragement to surface, because they were not shared by other members in the group, or because they were not directly related to the question the group was asked to address.

The list of problems included in this Appendix and the analysis which precedes it represent only those issues raised in group interviews by students in response to a single question posited them by the URSA field team. The list does not include any additional issues--and there were many--which surfaced in individual interviews.

As the study progressed, URSA used several questions in the group interviews, changing them to allow us to probe or follow new areas of concern. As most were non-productive (see VOLUME I on Methodology), this Appendix includes only responses to the question: "Given your experiences and observations, what problems does a woman encounter in becoming an X (doctor, dentist, etc.)?" for women, "Given your experiences and observations, what problems does a person encounter becoming an X?" for mixed groups, and "...what problems does a man encounter in becoming an X?" for the men.

Group members were given approximately ten minutes to write their responses to the question on a card, and the answers were recorded without discussion on easel pads so that all members of the group could see the responses. The list of problem categories included and discussed below was generated from the responses on these cards and on the easel pads. In most cases different issues were raised by men and women, but in all cases where the problem category was shared, it was discussed in different contexts, with different emphases, and in terms of a differential impact on men and women.

Generally the problems mentioned clustered into six categories: structural features of the school(s), profession(s), or sex roles; absence or inadequacy of programs, services, facilities, or equipment provided by the training institutions; problems with characteristics of the profession and its work; access to resources required to consider the profession, be admitted to school, and to participate fully in professional practice; negative attitudes and behaviors of peers, faculty, practitioners, and clients; and the impact on oneself of all of the above.

STRUCTURAL FEATURES OF THE SCHOOL(S), PROFESSION(S), OR SEX ROLES

This category includes all those structural features of the profession or school that affect women's experiences in training as well as structural consequences of societal sex roles which reflect the society's assumptions about appropriate roles for men and for women. By appropriate roles we mean those behaviors, feelings, attitudes, skills, attributes, characteristics, and motivations we usually associate with one sex to a greater extent and/or more often than with the other. Structurally, for women, this refers to the specific sets of responsibilities delegated to them by the society on the basis of their gender. Issues raised by women students in this category include:

Lack of Role Models

Basically this is an issue of how many and where women faculty appear in the schools. At some schools the problem is that there are no women faculty or clinicians at all to whom female students can look for evidence that a woman "can do it." In other schools, women appear only in what students consider the lesser status positions (e.g., Basic Science Instructors) which women students feel is a statement about a woman's proper role within the profession. At the few schools in which women clinicians appear in high level positions, some female students may reject them as unacceptable role models because the women have not managed to balance professional success in filling other feminine roles.

Lack of a Support Group of Women

Women students hope and sometimes expect that support from other women will help offset the social and professional isolation they feel in the male environment of the professional schools. The lack of such support is a severe disappointment and often aggravates the pressures of loneliness and isolation. This is a direct result of few numbers of women in a class or school and is compounded by differences in age and marital status.

Being Tracked into a Limited Range of Specialties or Practice Opportunities

This problem has two aspects. Certain specialties and practice options in each of the professions are labeled as more or less appropriate for women. To some degree these labels are consistent with commonly held stereotypes regarding women in this society. For example, the specialties involving work with children are all considered appropriate for women. Similarly, regarding practice options, those that involve supervising a staff and running a business are generally regarded inappropriate for women. For most women in making the decision regarding specialty selection or practice choice, the stereotypes and pressures to go into one rather than another selection are important. More important, though, are those problems arising from the necessities in a woman's life of carrying responsibility for both a family and a profession. This consideration, and at times necessity, works to track women into those specialties or practice options that are most easily controlled in terms of numbers of hours worked.

Balancing Work/Family

The years of professional training coincide in our society with a woman's childbearing years. To the extent that women are primarily responsible for the home and children, the problems of time management, energy commitment and sheer logistics in being a full-time student and committed practitioner and wife/mother at the same time create a tremendous pressure and problem for women that men do not experience. This is the single most widespread, cross-professional issue of which women spoke. If the women were not already in the position of managing both wife/mother and professional (student) roles, they anticipated that they would in the future.

Women at a Disadvantage Due to Background or Physical Ability

In some professions women feel that they have a distinct disability or handicap due to their background and socialization as women or due to physical size. In dentistry, for example, a familiarity with tool use and terminology is important and often assumed by the schools. Many women spoke of the problems they encountered in picking up such skills and information that the schools assumed they had but didn't (and that many male students did, in fact, have). In other professions where physical size and strength are important, women spoke of the difficulties and inequities in trying to learn techniques that were developed for the male physique.

Social Problems: Fear of the Impossibility of Finding a Mate

Women in all the MODVOPPP professions speak of some problems with dating men who do not understand, support, or accept their choice of a male profession. In medicine women speak of the fear of never finding a male who could accept their high status, high pay, and strong professional commitment. This problem is uniquely women's because it is an accepted pattern in our society for men to marry women who have less social status and less earning power than they. For women in professions with top status and pay, the range of men for whom they make appropriate matches tends to be limited to the men within the profession who might be more successful than they.

ABSENCE OR INADEQUACY OF PROGRAMS, SERVICES, FACILITIES, EQUIPMENT AND OTHER SUPPORTS OR RESOURCES

When schools fail to provide, or provide inadequate, resources in the learning environment and training program, difficulties are caused for women. This becomes an issue when their special or equal needs are not met by the physical plant. For example, when uniforms, lab coats, surgical gowns, etc., are not available in women's sizes women have to wear things too big for them or dress in the uniforms of other health professionals (such as clerks in pharmacies, nurses in surgery). Changing rooms, lounges, women's toilets, and on-call sleeping facilities are often not as available and accessible to women as to men. Health care services or insurance often do not cover gynecological and family planning services. Child care is not available. Escort services are not available for women working late in labs, clinics, or libraries.

CHARACTERISTICS OF THE PROFESSION AND ITS WORK

Issues in this category were only mentioned by male students. The category includes features of the work or of the profession which create a pressure on the student and on the practitioner. For example, the life or death responsibility of a physician is felt heavily by medical (both MD and DO) students who feel a special necessity for learning everything possible while in training, for developing emotional means of dealing with that responsibility, and for demanding a more than full-time dedication and commitment from themselves and their peers. An issue more widespread among the MODVOPPP professions has to do with the relative status of a profession vis-à-vis the medical profession. Particularly in the lesser known professions that are struggling with the medical profession for recognition and control over practice rights, the lower status is seen by male students to be a large obstacle to public acceptance.

ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES REQUIRED TO CONSIDER PROFESSION, BE ADMITTED TO SCHOOLS, OR ESTABLISH FULL PROFESSIONAL PRACTICE

Lack of Encouragement and/or Information

Given the rigors of training and the added pressures for women in a male profession, institutional and informal supports are vital. Women feel a lack of encouragement and support and at times experience direct discouragement. Particularly in the decision to pursue a profession the amount and extent of information and encouragement given women is vital. Although men spoke of a lack of information as an issue for them in the lesser known MODVOPPP professions, it is even more difficult for women. A related issue is access to information passed along informal networks that do not include women--e.g., fraternities, golfing partners, etc., giving helpful hints or suggestions for "how to get what you want" peculiar to the profession.

Access to the Profession's Informal Network of Practitioners

Women experience problems in this area both in training and when trying to obtain access to internships, residencies, or jobs. While in training, women report they are left out of the informal male network in which information is exchanged, support given, and friendships formed. These settings include fraternities, men's changing rooms, golf, and other athletic teams. Women worry that this will result in being left outside the referral and job network when they become practitioners. All students, male and female, worry about getting jobs, internships, and residencies. Women devote much of their energy in this regard to figuring out how to deal with the well-documented and well-known prejudices against women held by practitioners. This increases the pressure on women to "prove" themselves, reinforces the feeling that they aren't welcome in the profession, and most importantly, represents a real obstacle to women in getting through training and into professional practice. Jobs passed from fraternity brother to fraternity brother, practitioners relying on informal recommendations from their friends regarding which applicants to accept to their practice, and prejudices about the abilities and competencies of women all result in important limits on women's access to these positions.

Absence of Appropriate Personal Characteristics and Attributes Required of Students, Practitioners

This problem was expressed in resentments and statements made by male students in their group interviews and by women in terms of the main stereotypes which the women feel are used to challenge their presence in the schools and in the professions. Frequently mentioned stereotypes include: "women are too emotional", "women are only accepted because they are women", "women are less dedicated", "women are only here to prove something", "women are not good at analytical thinking", "women are too indecisive to be good managers".

Absence of, Concern about Ability to Meet Formal Requirements of Students, Practitioners

This category of issues was mentioned only by men in most professions. It was expressed as concern about passing courses, passing the National Licensing Boards, etc.

Access to Financing

The financial burden of training is felt by both male and female students, but it is expressed to a different degree and in different contexts. For women it is harder to earn money before and while in training. The jobs available to women often pay less money, and in some professions where jobs are available to the untrained (e.g., veterinary clinic assistant), women are not given the jobs. While in training women report they believe it is more difficult for women to get adequate loans. Parents are often less willing to support a woman than a man through expensive and long training. Spouses are less often available as a source of support for women.

NEGATIVE ATTITUDES AND BEHAVIORS OF OTHERS

This category includes the constellation of attitudes, reactions, and behaviors which women face daily in the training environment.

Incidents of Sexism in the School

We heard many and various reports of jokes at the expense of women--e.g., denigrating comments, nudie slides in lectures, actions or comments aimed at embarassing or "putting down" women, intentional or unintentional use of language in such a way as to ignore or put down women. The majority of these incidents were performed by male peers or male faculty.

Resentments by Male Peers

This resentment is primarily expressed by male students in regard to competitive situations in the profession. For example, it includes resentments that women in school are taking a man's place, that women getting jobs means less for men. It also includes beliefs that women get special treatment by admissions committees, faculty members, and clinicians. Another source of resentment from male peers regards the amount of sexuality that is regarded as appropriate in women. At some schools males express disapproval of the women for stepping outside the boundaries of a traditional woman's role, thus in some way challenging their own assumptions about and ways of dealing with women.

Client Prejudices

This category includes both real and anticipated problems with patient disbelief, distrust, and sometimes refusal to be treated by a female practitioner. The result of these prejudices is that while in training women may be denied important learning opportunities, while in practice it may be more difficult for them to get patients, and in all cases they must anticipate the necessity of proving their competence.

The Prejudices of Staff and Employees in Clinic Settings

In the professions that include a business or managerial component, prejudices and unwillingness of employees and staff to be supervised by a woman is particularly difficult. In all the professions, respect and acceptance as a professional by other health workers is essential. Women report that respect and acceptance are denied them because of their gender.

THE IMPACT ON ONESELF OF STRUCTURAL FEATURES, THE ATTITUDES, AND BEHAVIORS OF OTHERS, OF THE TRAINING PROCESS ITSELF

All of the above listed problems mentioned by women have some impact on their own feelings about themselves and their profession, on the choices they make, and on their behaviors.

Women's Double Binds

This category was variously described by women as "walking a very thin line", "damned if you do, damned if you don't", and "you can't win as a woman and as a professional." Standards of professional behavior conflict with standards of feminine behavior and women are caught in the middle, particularly in situations requiring aggressiveness, decisiveness, or managing others.

Women's Feeling That They Must Work Harder to Prove Themselves

The combined pressures and impact on women of stereotypes that challenge women's abilities, competencies and commitments result in women reporting the following kinds of problems: women fear making mistakes or taking risks; they fear speaking up or asking questions that might be considered stupid; they feel they have to work twice as hard to be recognized by faculty; women feel reluctant or unable to ask for any special support or help out of fear that the request would reinforce negative stereotypes about women.

Problems with Maintaining Relationships/Other Interests

This has most to do with the emotional strain, academic time pressures, and isolation of being a health profession student. Both male and female students feel cut off from friends not in training with them, and they experience problems in finding energy to devote to significant relationships and in lack of time to spend on other interests. While these problems were mentioned with equal emphasis by both men and women, for women the problems of isolation and being cut off from people outside of the training experience increases the difficulties they experience of being isolated within the training environment, too.

Competition and Academic Pressures

Only male students have expressed this as a concern in each profession, and it appears to be a central problem for them.

Feeling You Must Turn Off Your Emotions

Although related to double binds for women where expressing emotion is considered inappropriate as professional behavior, this is a specific issue that was raised by both men and women. Professional conduct and the pressures of dealing with many cases in a small amount of time demands a certain distancing on the part of the practitioner. Women and some men take issue with these demands because they feel it cuts off a part of them that is (and in their minds, should be) a part of their medical involvement.

Concern That The Training Process "Changes Who You Are"

Again, a concern shared by male and female students, this relates to all the ways in which they feel the professionalization process demands conformity to a single model of professional conduct and attributes.

Three Summary Checklists of Group Interview Issues follow. The first compares women's concerns among the eight MODVOPPP health professions included in this study; the second compares men's. The third compares men's and women's responses in this profession only.

SUMMARY CHECKLIST OF FEMALE GROUP INTERVIEW ISSUES

COMPARATIVE MODVOPPP PROFESSIONS

	M	O	D	V	O	P	P.	P
STRUCTURAL FEATURES								
Lack of Role Models	●	●				●		●
Lack of Support Group of Women		●				●		●
Tracked into Limited Specialties/Options	●	●	●	●		●	●	
Balancing Work/Family	●	●	●	●	●	●	●	
Women's Disadvantage in Background or Size		●	●	●				
Social Problems	●							
ABSENCE OR INADEQUACY OF FACILITIES	●	●	●	●		●		
CHARACTERISTICS OF THE PROFESSION AND ITS WORK								
Life and Death Responsibility								
Relative Status of the Profession					●			●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES								
Lack of Encouragement and/or Information	●	●	●	●	●		●	●
Access to the Informal Network	●	●	●		●	●	●	●
Absence of Required Personal Attributes	●	●	●	●	●	●	●	●
Absence or Concern about Meeting Formal Requirements			●			●	●	
Access to Financing	●	●	●	●	●	●	●	
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS								
Incidents of Sexism	●	●	●	●	●	●	●	●
Resentment by Male Peers	●	●	●	●	●	●	●	
Client Prejudices	●	●	●	●	●	●	●	
Staff/Employee Prejudices	●		●			●	●	●
IMPACT ON SELF OF TRAINING								
Double Binds	●	●	●	●		●	●	●
Women Feel Must Work Harder	●	●	●	●	●	●	●	●
Problems with Maintaining Relationships	●	●	●	●		●		
Competition and Academic Pressures								
Feeling You Must Turn off Emotions	●	●	●					●
Concern That the Training Process Changes You	●							

SUMMARY CHECKLIST OF MALE GROUP INTERVIEW ISSUES
COMPARATIVE MODVOPPP PROFESSIONS

	M	O	D	V	O	P	P	P
STRUCTURAL FEATURES								
Lack of Role Models								
Lack of Support Group of Women								
Tracked into Limited Specialties/Options								
Balancing Work/Family								
Women's Disadvantage in Background or Size								
Social Problems								
ABSENCE OR INADEQUACY OF FACILITIES								
CHARACTERISTICS OF THE PROFESSION AND ITS WORK								
Life and Death Responsibility	●	●						
Relative Status of the Profession		●	●		●	●	●	●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES								
Lack of Encouragement and/or Information								●
Access to the Informal Network								
Absence of Required Personal Attributes								
Absence or Concern about Meeting Formal Requirements		●	●		●	●	●	●
Access to Financing	●	●	●	●		●	●	
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS								
Incidents of Sexism								
Resentment by Male Peers								
Client Prejudices								
Staff/Employee Prejudices								
IMPACT ON SELF OF TRAINING								
Double Binds								
Women Feel Must Work Harder								
Problems with Maintaining Relationships	●	●		●		●		
Competition and Academic Pressures	●	●	●	●		●	●	●
Feeling You Must Turn off Emotions								
Concern That the Training Process Changes You	●	●						

SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES

MEDICINE	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models	●	
Lack of Support Group of Women		
Tracked into Limited Specialties/Options	●	
Balancing Work/Family	●	
Women's Disadvantage in Background or Size		
Social Problems	●	
ABSENCE OR INADEQUACY OF FACILITIES	●	
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		●
Relative Status of the Profession		
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information	●	
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements		
Access to Financing	●	●
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices	●	
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	●
Competition and Academic Pressures		●
Feeling you must Turn off Emotions	●	
Concern that the Training Process Changes You	●	●

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SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES

OSTEOPATHIC MEDICINE

	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models	●	
Lack of Support Group of Women	●	
Tracked into Limited Specialties/Options	●	
Balancing Work/Family	●	
Women's Disadvantage in Background or Size	●	
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES	●	
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		●
Relative Status of the Profession		●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information	●	
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements		●
Access to Financing	●	●
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices		
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	●
Competition and Academic Pressures		●
Feeling you must Turn off Emotions	●	
Concern that the Training Process Changes You	●	●

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SUMMARY CHECKLIST OF GROUP INTERVIEW

DENTISTRY

	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models		
Lack of Support Group of Women		
Tracked into Limited Specialties/Options	●	
Balancing Work/Family	●	
Women's Disadvantage in Background or Size	●	
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES	●	
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		
Relative Status of the Profession		●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information	●	
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements	●	●
Access to Financing	●	●
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices	●	
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	
Competition and Academic Pressures		●
Feeling you must Turn off Emotions	●	
Concern that the Training Process Changes You		

SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES
VETERINARY MEDICINE

	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models		
Lack of Support Group of Women		
Tracked into Limited Specialties/Options	●	
Balancing Work/Family	●	
Women's Disadvantage in Background or Size	●	
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES	●	
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		
Relative Status of the Profession		
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information	●	
Access to the Informal Network		
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements		
Access to Financing	●	●
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices		
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	●
Competition and Academic Pressures		●
Feeling you must Turn off Emotions		
Concern that the Training Process Changes You		

SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES

OPTOMETRY	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models		
Lack of Support Group of Women		
Tracked into Limited Specialties/Options		
Balancing Work/Family	●	
Women's Disadvantage in Background or Size		
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES		
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		
Relative Status of the Profession	●	●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information	●	
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements		●
Access to Financing	●	
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices		
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	
Competition and Academic Pressures		
Feeling you must Turn off Emotions		
Concern that the Training Process Changes You		

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SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES

PODIATRY

	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models	●	
Lack of Support Group of Women	●	
Tracked into Limited Specialties/Options	●	
Balancing Work/Family	●	
Women's Disadvantage in Background or Size		
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES	●	
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		
Relative Status of the Profession		●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information		
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements	●	●
Access to Financing	●	●
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices	●	
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	●
Competition and Academic Pressures		●
Feeling you must Turn off Emotions		
Concern that the Training Process Changes You		

SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES

PHARMACY

	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models		
Lack of Support Group of Women		
Tracked into Limited Specialties/Options		
Balancing Work/Family	●	
Women's Disadvantage in Background or Size	●	
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES	●	
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		
Relative Status of the Profession		●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information		
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements		●
Access to Financing	●	●
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers	●	
Client Prejudices	●	
Staff/Employee Prejudices	●	
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships	●	
Competition and Academic Pressures		●
Feeling you must Turn off Emotions		
Concern that the Training Process Changes You		

SUMMARY CHECKLIST OF GROUP INTERVIEW ISSUES

PUBLIC HEALTH

	WOMEN	MEN
STRUCTURAL FEATURES		
Lack of Role Models	●	
Lack of Support Group of Women	●	
Tracked into Limited Specialties/Options		
Balancing Work/Family		
Women's Disadvantage in Background or Size		
Social Problems		
ABSENCE OR INADEQUACY OF FACILITIES		
CHARACTERISTICS OF THE PROFESSION AND ITS WORK		
Life and Death Responsibility		
Relative Status of the Profession	●	●
ABSENCE OF OR DIFFICULTY IN GAINING ACCESS TO RESOURCES		
Lack of Encouragement and/or Information	●	●
Access to the Informal Network	●	
Absence of Required Personal Attributes	●	
Absence or Concern about Meeting Formal Requirements		●
Access to Financing		
NEGATIVE ATTITUDES/BEHAVIORS OF OTHERS		
Incidents of Sexism	●	
Resentment by Male Peers		
Client Prejudices		
Staff/Employee Prejudices	●	
IMPACT ON SELF OF TRAINING		
Double Binds	●	
Women Feel Must Work Harder	●	
Problems with Maintaining Relationships		
Competition and Academic Pressures		●
Feeling you must Turn off Emotions	●	
Concern that the Training Process Changes You		

APPENDIX D

FINANCIAL AID

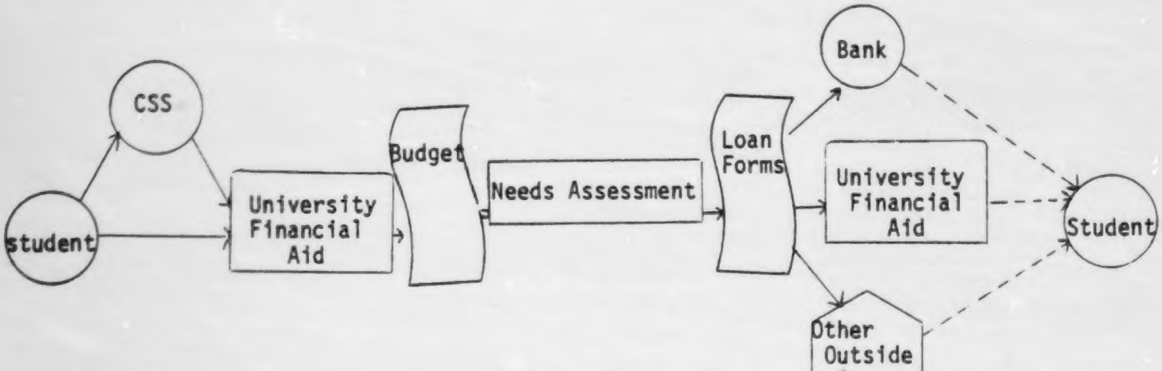
Training in the MODVOPPP health professions is typically a long and expensive process. Most students require and are dependent upon loans, grants and scholarships to supplement their own, their parents', or their spouses' ability to support them financially through the long years of their professional education. Financial aid is thus a key and critical resource to which men and women alike must have access in order to participate in a health professions' education.

This appendix summarizes the key steps students and schools follow in arranging various combinations of sources and types of financial aid into packages appropriate to an individual student's needs. It summarizes main federal student financial aid programs and discusses several non-federal programs for purposes of illustrating the range of sources and programs available. It also suggests some of the areas in which women may experience unique or particular difficulties in obtaining financial aid adequate to support their educational needs.

A. METHODS OF DETERMINING FINANCIAL NEED

Several steps are required to determine the amount of financial assistance a student needs per year at a given institution. The first step is the assessment of the student's resources (including parents). Schools are required by federal aid sources to use an outside agency for this analysis. The most commonly used agency is the College Scholarship Service (CSS), a division of the Education Testing Service (ETS). The American College Testing Service (ACT) performs a similar function. The formulas used by ACT to assess resources are nearly identical to those of CSS so we will only examine CSS here since its use is broader.

Once the resources are established, the school will estimate the student's financial need by comparing resources to a basic budget prepared by the financial aid office. Finally, the student must apply for funds from various sources. The steps, programmed in Figure 1, will be discussed separately below.



1. Analysis of Resources

CSS provides two types of financial aid application forms, the Parents' Confidential Statement (PCS) and the Student's Financial Statement (SFS). The PCS is intended for dependent students and the SFS for independent students. Dependent/independent status is determined by whether the student filed an income tax return the previous year, or was claimed as a dependent on the parents' return. However, since no federal aid sources recognize independent student status, most schools now use only the PCS form. In addition, ETS also has a Graduate and Professional School Financial Aid Service (GAPSFAS). The GAPSFAS form provides greater reporting coverage of the student's (and spouse's) income and assets as well as those of the parents. The GAPSFAS is not widely used, but financial aid offices we spoke with suggested that it puts less emphasis on the income of the parents, and is thus really more appropriate for the older professional (or graduate) student.

The CSS uses the income reporting form to determine the amount of "reasonable" student and parent contribution to the students' educational expenses. The table below is used by CSS to determine parental contributions based on adjusted gross income (income and assets minus a specified series of deductions and allowances) and number of dependent children. The method of determining these contributions is derived from the Bureau of Labor Statistics' (BCS) low and moderate budgets.

CSS ESTIMATE OF PARENTS' ABILITY TO CONTRIBUTE TO EDUCATION EXPENSES

ITEM I	Number of Dependent Children				
	1	2	3	4	5
$7,000	$ 20				
8,000	290				
9,000	555	220			
10,000	820	450	180		
11,000	1,050	670	380	20	
12,000	1,290	900	590	200	90
13,000	1,570	1,130	790	390	270
14,000	1,900	1,380	1,000	580	440
15,000	2,280	1,670	1,240	760	620
16,000	2,730	2,010	1,510	960	800
17,000	3,260	2,410	1,820	1,190	990
18,000	3,810	2,890	2,190	1,450	1,230
19,000	4,360	3,440	2,630	1,750	1,500
20,000	4,910	3,990	3,130	2,110	1,810
21,000	5,460	4,540	3,680	2,530	2,180
22,000	over 6,000	5,090	4,230	3,020	2,610
23,000	over 6,000	5,640	4,780	3,570	3,110
24,000	over 6,000	over 6,000	5,330	4,120	3,660
25,000	over 6,000	over 6,000	5,880	4,670	4,210
				5,220	4,760

Source: *"Meeting College Costs, A Guide for Parents and Students," CSS/CEEB, New York, N.Y., 1974. p.5.*

Once the reasonable parental contribution is determined, the school financial aid office looks at other sources of income, including:

- Student savings. Since most professional school applicants are directly from undergraduate training, students are not likely to have substantial savings.
- Summer earnings. Some schools, particularly the 3-year institutions, cannot expect students to earn money while enrolled. The usual expected summer earning contribution is $600, but there is evidence that this figure may be too optimistic (3:7), considering the lower pay for short-term jobs for semi-skilled students, and the fact that they must also support themselves for the summer.
- Spousal income. Most schools require a minimal spousal support of $3,000 per year unless there are pre-school children in the family. While schools will permit a student's wife to stay home with the children, there is rarely a provision for a woman student's husband to do so. One school we visited, when confronted by a student with this problem, felt that, in the interest of fairness, it had to permit spousal support for a non-working husband. Other schools, however, have not permitted this possibility.
- Work/study. EOC work/study grants are available on most campuses. However, all professional schools discourage work/study since the professional training schedule already demands maximum student effort.

2. Student Budgets

Financial aid offices develop budgets using a variety of systems. Fixed costs, such as tuition and fees, present no problem. Book and supply (instruments, lab coats, etc.) costs are estimated on a year-in-school basis by the departments involved. However, student living expenses become more complicated. Some schools develop 9- or 12-month (depending on length of the school year) budgets based on BLS low-income budgets for food, clothing, housing, and other costs adjusted by the part of the country; other schools base their budgets on "going rates" as reported by students, the housing office, the experience of the financial aid staff, etc. Variables in these budgets which affect women students in particular are whether there is an allowance for child care (and if so, whether it is realistic); whether married student budgets allow a more generous standard of living; and, if transportation to and from clinic sites is necessary, whether there is a car allowance.

Below are sample student budgets for several of the MODVOPPP professions (estimated expenses less tuition and fees, books and supplies).

STUDENT EXPENSES FOR SELECTED PROFESSIONS BY MARITAL STATUS. PUBLIC OR PRIVATE INSTITUTION

9 MONTH PUBLIC INSTITUTIONS

	Single Student		Married Student	
	Veterinary Med.	Medicine	Veterinary Med.	Medicine
Room & Board	$1,750	$2,275	2,800	3,785
Personal	487	878	1,057	1,368
Transportation	305	396	420	546
Medical	125	162	240	312
TOTAL	$2,667	3,711	4,817	6,011

	9 MONTH, PUBLIC INSTITUTIONS		9 MONTH, PRIVATE INSTITUTIONS	
	Dentistry		Medicine	
	Single Student	Married Student	Single Student	Married Student
Flat Rate	$2,800	4,800	3,300	4,500

Most schools do not have the resources in staff or funds to allow much flexibility in these budgets. Financial aid officers try to hold back a certain amount of their funds to meet student emergencies such as unexpected medical costs as they arise during the school years. No financial aid office will award over budget limits except for short-term emergency loans.

3. Applying for Aid

Application systems for financial aid vary for each school. Since the processing of CSS forms and loan applications takes considerable time, the process begins well in advance (about 3 - 6 months) of the start of the school year. Some schools require students to fill out a single form, and then the school applies for federal and other money for the student. Most schools, however, require students to apply for federally insured loans pricr to applying for school assistance. (See descriptions of sample loan sources, B.1 appended to tnis report.) The financial aid office provides the necessary forms, and sends the student to his/her home bank to apply. The single most serious problem for students arises here, since some smaller banks are not willing to invest at the lower (7% simple interest) rate of the federally insured loans when other investments offer a shorter-term, higher interest rate. (4) Also, several women dental students reported that banks may not be as willing to invest in a woman applicant, since they may see her as less likely to complete her professional training or as less likely to practice full-time (if at all) after graduation. The amount of paperwork entailed by this loan process (particularly if the student is from a disadvantaged family and therefore eligible for interest payment subsidy) may also discourage small banks. (4)

Students may also choose to elect one of the full-support programs (Public Health Service or military). The main focus of these programs is primary care physicians, osteopathic physicians and general care dentists. Other professional students must compete for a limited number of spaces (determined by need, estimated by the various services).

When major outside sources of support are exhausted, the student may then apply for school administered funds, including Health Profession Loans an scholarships, and school endowment funds.

Other outside sources are utilized as much as possible. Some of these outside sources may provide significant amounts of money, but usually to a limited number of students. Most professional associations have established foundations to support professional students such as the American Fund for Dental Health (AFDH), of which the American Dental Association is a sponsor. Other sources of support include the professional women's associations, such as the American Medical Women's Association (AMWA), and the American Association of Women Dentists (AAWD), etc.

B. SELECTED FINANCIAL AID SOURCES, REQUIREMENTS

The following chart, Table 2, includes all major federal aid sources and selected "other" sources since it is impossible to cover all forms of financial aid. The table illustrates some of the more significant eligibility and other requirements of these programs. More detailed descriptions of each of the ten programs are attached, and are categorized as A) All-inclusive plans; B) Primary sources; C) Significant special interest sources (four selected examples); and D) Forgiveness (Public Health Service Shortage Area Agreements only). The PHS service agreements are included in a separate category since the agreement program is not a funding source *per se*, but a repayment mechanism elected *after* completion of training supported by loans from other sources.

Some of the more significant parameters of Table 2 in regard to women students include the following:

- Item 3, Special for Women. Only two of the programs looked at specifically indicate a special interest in supporting women students. The AMWA program is for women medical students only, and the Robert Wood Johnson Foundation scholarships give preference to women, as well as minority, medical, dental, and nursing students.

- Item 4, Age Limit. Both of the all-inclusive support programs have age limits. Since our women responsdents often were older than their male counterparts, these limits may prove to be a handicap for them.

- Items 5 and 6, Place of Residence and Family Income. While national data on family income and place of residence are not available by sex, information from

REQUIREMENTS OF SELECTED EXAMPLES OF FUNDING SOURCES

	1. PROFESSIONS INCLUDED	2. ETHNICITY	3. SPECIAL FOR WOMEN	4. AGE LIMIT	5. PLACE OF RESIDENCE	6. FAMILY INCOME	7. COMMITMENT TO SERVE a. Time	b. Choice of Service Location	8. FULL-TIME STATUS REQUIRED	9. ACADEMIC STANDING REQUIREMENTS	10. NEARNESS TO GRADUATION	11. WORK EXPERIENCE	12. DESCRIPTION a. Maximum Amount	b. Repayment	13. OTHER
1. PHS Scholarships	All except Public Hlth. (1)	Prefer Native Americans	N/A	44	N/A	No Mention	2 yr. minim.	can choose no final decision	yes	'Acceptable' Pref. high	Prefer 2 - 4th year	Preference	Full tuit.& $750/mo.	year-for year service	Eligible for Commission
2. Armed Forces Scholarships	MODVOPPP varies	N/A	N/A	28	N/A	N/A	2-yr. minim.	Same	yes	Same	N/A	N/A	Full tuit.& $400/mo.	Same	Same
3. Federal Guaranteed Loans	All	N/A	N/A	N/A	N/A	Demonstrate need	N/A	N/A	yes	N/A	N/A	N/A	$3500 per year	7% interest 5-10yr repay	-
4. Health Professional Loans & Scholarships	All except Public Hlth. (1)	N/A	N/A	N/A	N/A	Same	N/A	N/A	yes	N/A	N/A	N/A	Same	3% interest	Scholarships determine by school
5. United Student Aid Funds	Medicine Dentistry	N/A	N/A	N/A	N/A	Same	N/A	N/A	?	"Good"	N/A	N/A	$3500 per year	8% interest 10yr repay	Not well known also a 1/2% endorsement fee
6. American Fund for Dental Health	Dentistry	Preferred	N/A	N/A	N/A	Low Income	N/A	N/A	yes	'Acceptable' for Dent. Sch.	Last yr. undergraduate	N/A	$2500 per year	N/A	-
7. AMWA Loan Fund	Medicine	N/A	yes	N/A	N/A	Demonstrate need	N/A	N/A	?	80% standing	N/A	N/A	$1000 per year	5% interest 5 yr repay	Limited # of Loans per year
8. Robert Wood Johnson Foundation	Dentistry	Preferred	yes	N/A	Prefer rural	Low Income	Assume not req.	N/A	yes	N/A	N/A	N/A	N/A	N/A	Administered by AFDH
9. Michigan Blue Shield	Med., Osteo. Medicine	N/A	N/A	N/A	State	Demonstrate need	State	Prefer shortage area	yes	N/A	3rd & 4th yr only	N/A	$5000 max.	Going rates 5yr repayments	Blue Shield will co-sign bank loan
10. PHS Shortage Area Agreements	All except Public Hlth. (1)	N/A	N/A	N/A	N/A	N/A	2 or 3 yr	Can choose no final agreement	N/A	N/A	Practice	N/A	Forgiveness 60% of Loans for 2 yrs; 85% for 3 yrs		-

(1) *May include some hospital administration students.*

our respondents indicates that women students are more likely to come from slightly higher-income, more urban backgrounds than men. The middle-income family is hardest hit by college and professional training costs, since many programs, especially scholarships, require that students come from low-income families. The preference for students with rural backgrounds is based on the assumption that these students are more likely to return to their hometown areas for practice. Women from both low-income and rural backgrounds, however, are less likely to aspire to professional careers.

- Item 7, Commitment to Serve. Service commitments are required by both all-inclusive support plans and and the PHS loan forgiveness plan. The problem here for women is that because of expectations on their part that they might marry in the intervening training years, their mobility will be hampered. All plans allow students the opportunity to indicate their preferred assignment among the available services or sites, but no guarantee of assignment to this preference can be made. If a woman student marries a male student in the same profession, these programs will make an effort to assign spouses to the same geographic area (not necessarily the same site) only if they graduate at the same time. Many women student respondents indicated to us that they hesitated to enroll in any of these programs since they felt they might jeopardize present marriages or future marriage plans.

- Item 8, Full-time Status. Because of the full-time status requirement of all federal aid programs (including capitation grants, which are direct aid to schools for operating expenses based on a per capita, full-time student formula), most schools will not enroll part-time students in degree programs. This is a problem for those women who may find themselves having to drop out of school altogether in order to cope with family responsibilities when part-time study, if available would make it possible for them to stay in school. Women health professions students in particular are acutely aware of the statistics suggesting that it is better for a woman to have her first child before the age of 30, which is nearly impossible given the length of undergraduate and professional training programs.

Other problems which women may encounter in successfully applying for financial assistance occur during the various steps along the way. The first of these is the dependent/independent student status problem. The resource analysis services will frequently declare a student independent if circumstances warrant it, such as in the case of a 44-year old married student whose parents are living on pensions. However, since the federal aid sources recently eliminated recognition of the independent student status, a unique problem arises for some women students whose families are financially able to contribute to the student's support but who refuse to do so on the grounds that "women don't need/shouldn't have a profession." This is particularly a problem for women from ethnic minority or rural backgrounds where the traditional female role is restricted to home and family. One woman medical student who encountered this problem several years ago had to spend a year getting along on what little non-federal aid she could find (with the school's help) to establish her independent status; after that, she could apply for federal loans. Now, however, without provision for independent status in federal financial aid programs, there is no recourse for these students unless sufficient sources of non-federal aid can be found. Medicine and Dentistry have been able to use Robert Wood Johnson Foundation money (specifically for women and minorities) but this money runs out in 1975-76 for medicine and 1976-77 for dentistry. One financial aid office we spoke with felt that the schools will have to fight out the independent student status problem at some point since a few students are disproportionately burdened by it.

Another issue about which women frequently expressed resentment in group interviews is that men have wives to support them while the women are less likely to be married or, if married, their spouses are often classmates. This is not a problem to be addressed by funding sources, but financial aid offices vary widely in their means of developing married/unmarried student budgets, and married students, due to higher expenses, may have an advantage in competing for limited funds (1:34).

All-Inclusive Support

Public Health Service Scholarship Program

1. Professions: Printed material available for medicine, osteopathic medicine and dentistry. Students are accepted from other MODVOPPP professions only as the PHS foresees a need for the services of other MODVOPPP professionals.

2. Ethnicity: Preference given to American Indians or Alaska natives

3. Special for Women: N/A

4. Age: Under 44 years

5. Place of Residence: N/A

6. Family Income: No mention

7. Commitment to Serve: Minimum 2 years; 1 year for each academic year of support (or fraction thereof). Assignments include:

   - National Health Service Corps (NHSC)
   - Indian Health Service (IHS)
   - Division of Hospitals and Clinics/Bureau of Medical Services (BMS)
   - Coast Guard Medical Facilities (Fixed or Mobile)
   - Federal Prisons Medical Facilities

   Student indicates preference but assignment dependent on PHS needs. PHS will attempt to keep spouses in same geographic area, only if they graduate and begin service at the same time.

8. Full-Time Status: Required

9. Academic Standing: "Acceptable" level; preference given to higher academic performance.

10. Nearness to Graduation: If funds are limited, priority given to students who have completed one or more years.

11. Work Experience: Priority given to applicants with work experience (not defined)

12. Description: PHS pays all tuition and fees, plus a monthly stipend of $750.00 per month to cover all educational costs for nine months per year.

13. Other: Must meet physical requirements for PHS commission

Military

Armed Forces Health Professions Scholarship Program (Army, Navy and Air Force)

1. Professions: Medicine, Osteopathy, Dentistry, Optometry, Podiatry, Veterinary Medicine (Army only)
2. Ethnicity: N/A
3. Special for Women: N/A
4. Age: Not over 28 unless prior military service
5. Place of Residence: N/A
6. Family Income: N/A
7. Commitment to Serve: Minimum 2 years; year-for-year (excluding post-graduate training where applicable). Internships are taken at military hospitals but not counted as a year of service. Student is expected to be motivated to a military service career.
8. Full-Time Status: Assumed
9. Academic Standing: No mention but transcript required for application
10. Nearness to Graduation: No mention
11. Work Experience: N/A
12. Description: Full tuition and fees plus stipend of $400.00 per month. Also, student is on "active duty" status 45 days per year and receives active duty pay of commissioned officer (2nd lieutenant) for this period although she/he may not be required to leave campus (if during school year). Total compensation average (excluding tuition and fees) is approximately $5,300.00 per year.
13. Other: Must meet health requirements of commissioned officer.

Primary Scholarships and Loans for Needy Students

Federal Guaranteed Student Loan Program

1. Professions Included: All MODVOPPPs
2. Ethnicity: N/A
3. Special for Women: N/A
4. Age: N/A
5. Place of Residence: N/A

6. Family Income: Must demonstrate need (See Needs Assessment)

7. Commitment to Serve: None (Forgiveness up to 85%, see PHS shortage area)

8. Full-Time Status: Required

9. Academic Standing: No requirement/"good standing", but standings sent to lender

10. Nearness to Graduation: N/A

11. Work Experience: N/A

12. Description: Funding through private lending institutions. Preferred that students apply through local bank. Amounts available up to $3,500 per year, not to exceed $12,000 total. Student pays 7% simple interest while in school (interest subsidy available for low income students). Payments on principle plus interest begin 9 months after leaving school, normally over a 5 year period (flexible--up to 10 years; to be determined by lending institution). Problems: amount of paperwork discourages smaller banks from handling since interest is lower than usual investments. Students from small towns may have trouble if local bank won't participate.

13. Other: None

Health Professions Student Loans and Scholarships

1. Professions Included: All MODVOPPs except Public Health

2. Ethnicity: N/A

3. Special for Women: N/A

4. Age: N/A

5. Place of Residence: N/A

6. Family Income: Demonstrate need

7. Commitment to Serve: None

8. Full-Time Status: Required

9. Academic Standing: N/A

10. Nearness to Graduation: N/A

11. Work Experience: N/A

12. Description: Schools estimate required funds for coming academic year; funds allocated directly to schools. If requests exceed available

funds, allotments are made to each school based on 1) requested amount, or 2) ratio of full-time students enrolled in a given school to total number of students in such schools applied to total funds available, whichever is smaller. Funds come from 2 sources: federal capital contributions and federal capital loans, both of which must be placed in special accounts by the schools. Capital contributions require a 1/9th matching fund. Up to 20% of capital contribution funds may be used as scholarships, at the school's discretion. Both sources may be used for student loans and excessive loan collection expenses; additionally, capital loan funds may be applied to repayment of principle and interest of federal capital loans. Loan maximum is $3,500 per year (9 months, pro rate more up to 12 months). Repayment begins 1 year after leaving full-time status, at 3% interest. Interest payments due while a student (and not counted in student budget).

13. Other: Schools must be eligible as well as student. Students must be nationals or permanent residents of the U.S. and territories. Schools generally award no 100% scholarships but a mix of loan and scholarships to the neediest students.

United Student Aid (USA) Funds, Inc. Graduate and Professional School Student Loan Program

1. Professions Included: Medicine, Dentistry
2. Ethnicity: N/A
3. Special for Women: N/A
4. Age: N/A
5. Place of Residence: N/A
6. Family Income: Demonstrate need (parent contribution is not stipulated)
7. Commitment to Serve: None
8. Full-Time Status: No mention
9. Academic Standing: "Good" standing
10. Nearness to Graduation: N/A
11. Work Experience: N/A
12. Description: Operated by Student Life Funding, a subsidiary of Equitable Life Assurance Society. Maximum per academic year is $3,500. Interest rate varies (8% 1973) and includes a ½% endorsement fee to USA Funds. Interest is paid yearly while in school. Notes are due September 1 but may be renewed until graduation. Repayment begins

October 1 after graduation (or 5 months after graduation) and repayment period is up to 10 years. No pre-payment penalty and early repayment is encouraged. No forgiveness available. Maximum $10,000 for graduate students.

13. Other: Schools do not encourage the use of this Fund unless desperate since interest is higher than federal loans. Not well known.

Significant Special-Interest Sources

American Fund for Dental Health (AFDH)

1. Professions Included: Dentistry
2. Ethnicity: Disadvantaged minority groups, especially Blacks, Mexican-Americans, American Indians and Puerto Ricans
3. Special for Women: N/A
4. Age: No limit mentioned
5. Place of Residence: N/A
6. Family Income: Low-income
7. Commitment to Serve: N/A
8. Full-Time Student Status: Required
9. Academic Standing: No specified level, high school and college transcripts required to demonstrate qualifications for entrance to dental school.
10. Nearness to Graduation: N/A (see 12)
11. Work Experience: N/A
12. Description: Scholarships awarded for five years, beginning in the final year of undergraduate pre-dental training. Maximum of $12,500 or $2,500 per year
13. Other: None

American Medical Women's Association (AMWA) Loan Fund

1. Professions Included: Medicine
2. Ethnicity: N/A
3. Special for Women: Yes

4. Age: No limit mentioned

5. Place of Residence: N/A

6. Family Income: Demonstrate need

7. Commitment to Serve: N/A

8. Full-Time Status: No mention

9. Academic Standing: Must maintain 80% standing

10. Nearness to Graduation: N/A

11. Work Experience: N/A

12. Description: Loans up to $1,000 per year to be applied to tuition, fees and expenses. Interest at 5% begins 6 months after graduation and repayment on principle begins 1 year after graduation. Repayment is 5 years or immediately if student does not complete her MD degree.

13. Other: Limited number of loans per year

Robert Wood Johnson Foundation

1. Professions Included: Dentistry

2. Ethnicity: Funds are directed to those who are most likely to practice in shortage areas. Includes Blacks, American Indians, Mexican-Americans and Mainland Puerto Rican students.

3. Special for Women: Emphasis also on women students

4. Age: N/A

5. Place of Residence: Emphasis on students from rural areas

6. Family Income: Low-income, demonstrate need

7. Commitment to Serve: Assumed student will practice in area with inadequate access to dental care, but no formal agreement required

8. Full-Time Status: Required

9. Academic Standing: N/A

10. Nearness to Graduation: N/A

11. Work Experience: N/A

12. Description: Fund is administered by the American Fund for Dental Health (AFDH). No information on amounts, interest or repayment schedule.

13. Other: Funds are sent to schools by AFDH for distribution to students. The grant was made to AFDH with the stipulation that the funds were to be expended within four years. A similar $10 million per year grant was made by the Robert Wood Johnson Foundation to medical schools with the same four year stipulation. The funds run out for medicine in 1975-76; for dentistry in 1976-77.

Michigan Blue Shield Medical Loan Program

1. Professions Included: Medicine, Osteopathic Medicine
2. Ethnicity: N/A
3. Special for Women: N/A
4. Age: N/A
5. Place of Residence: State of Michigan
6. Family Income: Demonstrate need
7. Commitment to Serve: Agreement to practice in Michigan. Additionally, if graduate practices in a shortage area of the state, Blue Shield will waive repayment of interest paid by Blue Shield while in training.
8. Full-Time Status: Required
9. Academic Standing: N/A
10. Nearness to Graduation: Eligible only in junior and senior years
11. Work Experience: N/A
12. Description: Blue Shield will guarantee/co-sign a loan to any Michigan resident in junior or senior years who has been unable to get other sources of financial assistance. Loans are guaranteed up to $5,000., and Blue Shield will pay interest until graduation. The student is responsible for interest payments while an intern/resident, and loans must be repaid within 5 years after practice is begun. Interest paid by Blue Shield must be repaid unless student establishes practice in a shortage area.
13. Other: None

Forgiveness

PHS Shortage Area Agreements

1. Professions Included: All MODVOPPPs except Public Health
2. Ethnicity: N/A

3. Special for Women: N/A

4. Age: N/A

5. Place of Residence: N/A

6. Family Income: N/A

7. Commitment to Serve: 2- or 3-year service agreements. Under the 2 year agreements, HEW pays interest and principal payments for 2 years to cover 60% of the principle of all outstanding loans in return for practice assignments in designated shortage areas. May be renewed for an additional year. 3-year agreements cover 85% of principle with payments of principle and interest paid by HEW for the three years. Eligible loans are defined as: "bona fide educational loans which represents a legally enforceable obligation to repay funds provided to meet the costs of a (MODVOPPP) education." Not clear why United Student Aid Funds, Inc. specifies its loans as non-forgiveable under this program.

8. Full-Time Status: Full-time practice

9. Academic Standing: N/A

10. Nearness to Graduation: N/A

11. Work Experience: N/A

12. Description: Designated shortage areas identified by HEW based on practitioner to population ratios. Applicant may specify desired shortage area but no promise of assignment in desired area is given. Applicant must have a license to practice, or obtain license prior to beginning assignment.

13. Other: None

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APPENDIX E

WOMEN IN THE PROFESSIONAL ASSOCIATIONS

In the summer of 1975 URSA conducted a quick survey of each MODVOPPP profession's major professional association and its journal to assess the historic and recent role, status, and power of women in the profession. We used as indicators of status and power representation among key elective and staff offices in the national association and on the major journal; receipt of national awards; and article authorship in the journal. A summary of our findings suggests that women's underrepresentation in roles of status and power in the MODVOPPP professions is even greater than underrepresentation judged simply on the proportion of women among active practitioners. That is, on each of the indicators we used to designate power and status, a smaller percentage of women appear in most instances than in the profession overall. This is less true if measured by article authorship and considerably more true when indicated by representation among key national association staff and elective offices. Some of the discrepancy between women's representation in the profession overall and as officers and journal authors might be accounted for by the absence of women as active candidates for office and because they may less often submit articles to the journals. Our research provided no way of determining how much of the discrepancy reflects women's "self-selection" from consideration and how much reflects a lack of opportunities in the profession for them to successfully compete for key offices and other positions of status and influence. However, our research did reveal that the discrepancy was one which may not necessarily be addressed by increasing enrollments of women in the professional schools and, subsequently, increasing numbers and proportions of active practitioners. As a consequence it does point to an area of potential concern for those decision-makers in the MODVOPPP professional associations who are interested in broadening the range of opportunities their profession presents to women for women's participation.

A brief description of the methods we used to conduct the survey of women in the professional associations follows along with a presentation of our findings.

THE ASSOCIATION RESEARCH

Method

We used several methods to obtain information on women's status, recognition and power within each major professional association. One involved direct contact with each professional association by telephone and by mail. An URSA staff member spoke with the head or assistant head of the public information department or to those people who had been found to be helpful in providing information previously to the study. These individuals were asked a set of questions (specified below) concerning women in the organization. Second, if more time was required to respond to the set of questions, we sent letters requesting the information we sought.

The Difficulties

Without question, the accuracy of the data must be held in doubt. Since the difficulties are severe, they will be explored first so that the reader may decide how to assess the information on women in the organizations as it is presented. First, we assumed the reliability of the data provided by the public information officials. We trusted that s/he provided accurate and complete information, since we used no independent means of verification. These people seemed to have little or no investment in the study (with the exception of a male staff member of the American Veterinary Medical Association who expressed a very strong personal desire to see women enjoy a greater role in the profession) but rather they seemed to want to place their association in the best possible light. Thus, many became somewhat defensive when they had to say there were no women in positions of power or authority in their association. Only after URSA's explaining that this lack of female power was to be expected would they become more willing to provide information.

The set of questions first telephoned then mailed to individuals at the association is as follows:

1) Has there ever been a woman as President of the Association, as Executive Director, or as Editor of the Journal?

   If yes, in what year?

2) Has there ever been a woman as Speaker of the House of Delegates or Chairman of any of the committees, sections or Association departments? Year?

3) Have women ever received awards from the Association? If yes, in what year? For what service?

4) Have women ever been presidents of the Board of Trustees? Have they been officers of the Board? If yes, in what year? What offices?

5) Have women held important positions on the Journal? If yes, what year? What positions?

6) Could we have a copy of your association's roster of state associations to determine the number of women heads of state and local associations?

The questions were listed in order of decreasing importance. What we considered most essential to know was whether women had ever held top positions in the national organization. A summary of the responses follows:

TABLE I

SUMMARY OF RESPONSES, WOMEN IN THE ASSOCIATIONS

QUESTION PROFESSION	1	2	3	4	5
MEDICINE	1	4(1)	4	1	
OSTEO. MED.	No information available				
DENTISTRY			2		
VET. MED.					
OPTOMETRY				1	
PODIATRY		1	5		
PHARMACY	1		10(3)		6
PUBLIC HEALTH	4	17(2)	7		

(1) These are positions, more than one woman may have held each slot

(2) For 1974 and 1975 only

(3) One woman received the same award twice--10 awards, 9 women.

We received no information from the American Osteopathic Association. All other associations supplied as much of the information requested as possible. Five of the profession's associations (medicine, dentistry, podiatry, pharmacy and public health) went to some lengths to assure us that women had held, or will hold (elective offices) positions of authority and responsibility in the profession other than those specified in the survey, including:

- vice-presidents of associations
- special assistants to association executives
- members, House of Delegates
- members, special purpose association boards.

However, our sampling of key slots makes it quite clear -- with the exception of public health -- that women have not been in positions of power and authority in the associations.

THE JOURNAL RESEARCH

Method

The journal research was conducted by a sampling system. We reviewed the July issue of the major association journal for each profession starting with 1970 continuing through the most current issue to determine if women contributed to the substance of the journal, and if so, then what kind of articles did they seem to most frequently contribute and where was their place of authorship on those articles. For the Journal of the American Medical Association (a weekly or bi-monthly) issues for the first and third weeks in July were checked. Therefore, twice as many medicine journals are represented in the findings.

The Difficulties

The accuracy of the journal research is also questionable. Initially, we determined if women were authors of articles by looking at the first name of each author in the table of contents. Then we looked at the actual article if only initials or questionable first names were given in the table of contents to see if full names were listed at the head of the article, if biographical sketches were given to see if female pronouns were used, and finally to see if there were pictures. For the most part, it was possible to determine with probable reasonable accuracy if a woman was an author except when only initials were used, and this was quite frequent in many of the journals. It is probable that some women will be left out; it is more likely that some men will be categorized as women.

The following Table 2 summarizes our findings on women as authors of journal articles, what proportion of those women authors are listed as first or sole authors, and the types of aritcles represented.

TABLE 2

SUMMARY OF THE JOURNAL REVIEW

PROFESSION	TOTAL NUMBER OF ARTICLES	WOMEN-AUTHORED ARTICLES		ARTICLES WITH WOMEN AS SOLE OR FIRST AUTHORS			TYPES OF ARTICLES BY WOMEN AUTHORS						ARTICLES BY WOMEN FOCUSED ON WOMENS CONCERNS (3)		1970: % OF WOMEN AS ACTIVE PRACTITIONERS
							SCIENTIFIC, ORIGINAL RESEARCH		PROFESSION-RELATED (1)		PERIPHERAL[2]				
		N=	% of Total	N=	% of all women authors	% of total	N=	% of all women authors	N=	% of all women authors	N=	% of all women authors	N=	% of all women authors	
MEDICINE	146[4]	19	13.0	6	31.5	4.17	11	57.9	4	36.4	4	36.4	4	36.4	6.9%
OSTEO. MED	40	0													7.1%
DENTISTRY	91	8	8.7	7	87.4	7.7	3	37.5	5	62.5	0	0.0	0	0.0	3.2%
VET. MED.	47[5]	0													5.1%
OPTOMETRY	40	5	12.5	4	80.0	10.0	4	80.0	1	20.0	0	0.0	0	0.0	2.1%
PODIATRY	54	3	5.5	2	66.6	3.7	0	0.0	2	66.7	1	33.3	0	0.0	4.0%
PHARMACY	45	7	15.5	3	42.9	6.6	7	100.0	0	0.0	0	0.0	0	0.0	9.0%
PUB. HEALTH	92	37	40.2	24	64.9	26.1	16	43.2	15	40.5	6	16.2	3	8.1	N/A
TOTAL	555	79	14.2	46	58.2	10.5	41	51.9	27	34.1	11	13.9	7	8.9	

(1) EXAMPLES: Articles on Professional Education, use and training of auxilliaries, evaluations of Health Care Programs

(2) EXAMPLES: Articles on decorating an office, writing for professional journals

(3) EXAMPLES: Cervical cancer, contraceptives for women, women's health centers

(4) JAMA (Journal of the American Medical Association) is represented by 12 issues; All other professional journals by 6 issues

(5) JAVMA (Journal of the American Veterinary Medical Association) uses authors' initials only; some of these may be women but were not identifiable. A number of women's names (11) appear in the Veterinary Research Journal checked for the same years.

Again, it would appear that women have a more significant voice in public health than in the other MODVOPPP professions. Over 40% of the articles in the Journal of the American Public Health Association are by women; the nearest competitor is the Journal of American Pharmacy Association with 15.5% women authors. However, women are more frequently authors of scientific, original research papers in medicine, optometry and pharmacy than in public health.

The table below (Table 3) is the same information with total authorship distributed by profession. It shows that medicine (from twice as many issues) represents over one quarter of the articles reviewed, and while slightly less than a quarter of the women authors are from the Journal of the American Medical Association, medicine represents an equivalent percent of women writing original, scientific research articles. Nearly half of the women authors (46.8%) are in public health, but these women authors represent only 39.0% of the scientific research papers.

TABLE 3

PROPORTION OF WOMEN AUTHORS AND TYPE OF PAPERS BY PROFESSION

	TOTAL ARTICLES		WOMEN AUTHORS		SCIENTIFIC ORIGINAL RESEARCH BY WOMEN		PROFESSION-RELATED ARTICLES BY WOMEN		PERIPHERAL ARTICLES BY WOMEN	
PROFESSION	N=	%	N=	%	N=	%	N=	%	N=	%
MEDICINE	146	26.3	19	24.1	11	26.8	4	14.8	4	36.4
OSTEO. MED.	40	7.2	0	0.0	0	0.0	0	0.0	0	0.0
DENTISTRY	91	16.4	8	10.1	3	7.3	5	18.5	0	0.0
VET. MED.	47	8.5	0	0.0	0	0.0	0	0.0	0	0.0
OPTOMETRY	40	7.2	5	6.3	4	9.8	1	3.7	0	0.0
PODIATRY	54	9.7	3	3.8	0	0.0	2	7.4	1	9.1
PHARMACY	45	8.1	7	8.9	7	17.1	0	0.0	0	0.0
PUB. HEALTH	92	16.6	37	46.8	16	39.0	15	55.6	6	54.6
TOTAL	555	100.0	79	100.0	41	100.0	27	100.0	11	100.0

APPENDIX F

DATA GAPS, SOURCES AND NEEDS

Most data on the MODVOPPP health professions is collected by the professional associations, education associations, the U.S. Census, and by federal agencies (usually through original data collected by the preceeding three types of data collecting groups). Information is collected on applicants, students, practitioners and schools. The utility and availability of the data depends on the purpose to which the data is put. Generally, the three major purposes are:

1) monitoring for compliance with federal and other funding source requirements. In the case of federal compliance monitoring, data is required in particular regarding Title VI of the Civil Rights Act, Title VII of the Public Health Service, Title IX of the Higher Education Act and Executive Order 11246 regarding non-discrimination on the basis of sex and ethnicity;

2) applied research for policy and program use by federal agencies, professional associations or schools; and

3) academic research by individuals and/or research and academic institutions interested in advancing the state of the art.

Problems in the utility and availability of the data depend on the purpose for which it was collected. In our case, data was need for two purposes:

1) assistance in school visit site selection; and

2) initial identification of possible key variables which might explain women's presence or absence in the MODVOPPP professions.

The baseline data we were seeking on a school-by-school basis included, for applicants and enrolled students:

- sex
- ethnicity
- age
- marital status
- professional aptitude test scores, and
- grade point average (GPA).

Additional information desired concerning enrolled students included:

- class standings
- attrition
- specialty choice
- source and type of financing.

Since we had hoped to identify trends in the data, the information was requested for periodic intervals back to 1950.

Very little or none of this information is published for all of the eight professions, so we planned to conduct a mail survey of the training institutions involved. However, some of the educational associations objected on the grounds that the survey would constitute a burden to schools already overloaded with requests for data. (It became clear to us in our later field work that, in fact, while the type of data we desired often is available on site, it is usually buried in individual student folders, and it would have required a major retrieval effort on the many of the schools to respond to our suvery.) A second objection to the data effort raised by associations which routinely collect the data concerned the confidentiality of the informants. Special permission was required to gain access to the data on a school-by-school basis.

Because of the problems encountered, the idea of the mail survey was abandoned, and we turned to existing data sources, insofar as possible, for the baseline data. As the study progressed, we have identified other types of data which we consider useful for either federal compliance monitoring purposes and/or for research focused on women in the MODVOPPP professions. The information we consider desirable will be discussed below in Appendix F on Categories of Data Needs.

I. PROBLEMS WITH EXISTING DATA

The data which are available (either in published form or on request from associations) display a number of flaws which interfere with their utility. These are discussed below.

A. DEFINITIONS OF TERMS

While data are available in some categories for all of the professions, definitions are not generally given, and are not comparable across all professions. Maximum utility requires that a single, measurable definition of the following terms be developed and applied for all MODVOPPP professions:

APPLICANT - "Applicants" may include (a) all who initiate but do not complete the application process; (b) those students who complete their applications in terms of credentials; (c) individuals who complete their applications, who meet formal requirements and whose files are reviewed by admissions committees. Each of these descriptions is a successively narrower definition encompassing fewer individuals. "Applicant" for information derived from centralized application services uses the broadest possible definition; while, for example, the American Dental Association (ADA) school survey defines application in the narrowest possible sense. The two sources of data therefore produce non-comparable "applicant" figures.

ATTRITION - Attrition figures often do not cover the reasons for student withdrawals, including academic, financial or personal problems and transfers or leaves of absence for research or other purposes. Providing retention figures does not solve the problem of identifying the real attrition rate, since one student may drop out, but if a transfer student move in, the researcher has no way of finding this out since the net enrollment is unchanged.

PRODUCTIVITY OF PRACTITIONERS - Various measures are used to determine the productivity of practitioners. The definition of the measures themselves are defined differently for each profession:

> Active/Inactive practitioners - The "active" category may include only direct patient care, or may be more broadly focused to cover practice-related activities or non-patient care work such as agency or administrative positions.
>
> Full-time/part-time - These categories are usually based on hours worked per week, but full-time may be 40+ hours, 35+, etc.

FOREIGN GRADUATES - It would be helpful if studies of foreign graduates would distinguish between foreign and US-born, foreign-trained professionals. It is possible that of the US citizens who are rejected from US medical schools, men rejected applicants are more likely to be advised to apply for training in foreign institutions. Also, in the case of dentistry, many of the women practitioners are encountered in our field site visits were foreign-born, foreign-trained individuals. Their presence increases the number of active women professionals in the field and may be misleading in regard to the actual number of women trained and now in active practice in the US.

TYPE OF EMPLOYMENT - Since practice varies by profession, data would be useful for comparative purposes if collected on some common parameters, such as self-employed in solo, group or partnership practice or employed by solo, partnership, group practices, agencies or the military.

TYPE OF PRACTICE - Again, since practice varies for each profession, common parameters should be determined, such as direct patient care, research, teaching, administration, etc.

YEAR IN SCHOOL - Since some schools are on three year programs, a third year student is the equivalent of a senior student. Data is various reported as the calender year in school, or by academic year in school. Reporting on the basis of calendar year in school results in a drop in fourth year (senior) students and reporting by academic year in school may artificially inflate aggregate class sizes. The American Dental Association (ADA) collects data by academic year in school, while medicine, for some reporting formats, uses first year, final year and intermediate years.

B. NON-COMPARABLE DATA SOURCES

Existing data often cannot be compared across professions or trends identified and analyzed within professions because information from different data sources report different results--even for the same year. For example, numbers of practitioners reported by the US census for 1970 differs from the estimates provided by the associations.

C. REPORTING VARIATIONS

Similar problems to the above occur due to reporting variations. Variations include:

- Reporting frequency (e.g., annual, every five or ten years, special studies). Since data for a particular category does not appear for the same years for each profession, one cannot directly compare professions on that category.
- Periods for which information is collected or compared vary among professions. For example, practitioner data may be available for years 1950 - 1968 in aggregate form so that any one year may not be compared to similar data for another profession presenting data for, say, 1925 - 1960.
- Reporting formats differ, making comparisons within or across professions difficult or impossible (e.g., attrition may be displayed on a yearly basis, by year-in-school or as an overall figure).

D. COMPREHENSIVENESS OF THE DATA

No single data collecting system, at present, can claim 100% reporting with the exception of some of the school data collected by school associations in the small professions. Some of the problems include the following.

- Association-collected data on applicants which is drawn from centralized application services is limited to those schools which participate in the service. Particularly in medicine and dentistry, schools which chose not to participate often exhibit unusual characteristics which may may be attractive to candidates significantly different from the "average" applicant.
- Association-collected data on practitioners is limited by membership, although some associations (notable the American Medical Association [AMA]) have turned to outside sources such as state licensing boards to increase the representativeness of the data.
- Census data is not necessarily representative because of inherent problems of definitions (e.g., prior to the 1970 census, podiatrists, MDs and doctors of osteopathic medicine [DOs] were all reported as "physicians") and reporting errors.

E. TRENDING

There are several problems involved in analyzing and displaying trends. First, certain information may not have been collected until recently (e.g., the AMA did not begin collecting information on ethnicity of applicants or students until 1968). Secondly, the sources, methods of collection and definitions of certain data categories may have changed over time, making comparison impossible (e.g., in 1967-68, the AMA physician reporting format was changed and "inactive" was redefined. Because of the redefinition, the number of "inactive" rose from 13,000 in 1967 to 19,000 in 1968). Some reports routinely provide trend data. The ADA annually reports increases in female enrollment over the preceeding year for each year-in-school. The ADA reporting format is stable so that longer-range trending may be done by the researcher, but the present reporting system was not begun until 1967.

F. AVAILABILITY AND ACCESSIBILITY OF DATA

Data on schools which is regularly collected by associations may not be available to the researcher for several reasons. As mentioned above, confidentiality of institutions may constrain some associations from reporting on a school-by-school basis and thus only aggregate, profession-wide information is published. Also, some data may be available but access is strictly limited. For example, the AMA computerized data systems can be used to make special runs (by sex, for example). However, permission must first be obtained through a review and approval of the proposed study by an internal AMA committee established for this purpose, and the special runs must be paid for by the researcher. Similarly, the ADA can offer special runs on its applicant/student computer files but the researcher may need to provide the necessary program or programmer.

G. KEY VARIABLES: SEX AND ETHNICITY

The needed data must be collected and reported by both sex and ethnicity. For example, excellent information on financing of health professions education has been collected by the Health Resources Administration (HRA) in HEW and published over the years in a series of studies on How Health Professions Students Finance Their Education. However, the data are not displayed by either sex or ethnicity and are therefore of limited utility to researchers interested in these variables. This is all too commonly the case with much of the available data.

H. LEVEL OF AGGREGATION

For purposes of compliance monitoring and for research focused on the impact of school variables such as public/private institutions, cost of training, etc., on individual experiences and performance in the schools, it is necessary to have information on a school-by-school basis. The lack of school-by-school data may result from the way existing data sources are presently set up, such as the centralized application services which now provide aggregate data to associations but school-by-school printouts for individual schools. Data from this source need to be reported on a school-by-school basis to be useful. While access may still be a problem for private research, school-by-school information must, of course, be available for compliance monitoring whether it is made available by individual schools or through centralized data sources such as the associations.

II. CATEGORIES OF DATA NEEDS

The types of information listed below for various populations and for schools include key data we feel is useful for compliance monitoring and applied or state of the art research. We realize that considerable effort and expense would be required to put the necessary reporting systems in place to collect such data. The smaller professions in particular, and those professions not already utilizing data collection aids such as centralized application or intern/resident matching systems face greater problems than either medicine or dentistry which already collect (and generally publish) much of the information we recommend. All data must be collected by sex and ethnicity on a school-by-school basis.

A. APPLICANTS/STUDENTS

Basically the same information should be collected for the following populations:

- applicants
- accepted but not enrolled students (all students offered places who do not enroll)
- first-year enrollment
- total student body
- last graduating class.

Collecting comparable data on these populations will allow identification of variables which affect admissions chances or may predict profession choice by profession and by individual school. It will possibly allow schools to identify what type of accepted applicant chooses to attend another school or select another profession, and changes in the overall student body.

1. Demographic Characteristics

Age

Marital Status

- married
- single
- divorced, separated, widow(er)

Number and Ages of Dependents

Father's education

Father's occupation

Mother's education

Mother's occupation

Relative(s) in the profession

Siblings by sex and age

Family income

Size of hometown

State of legal residency.

2. Formal Qualifications and Performance

Grade Point Average (GPA); overall (and science if used)

Professional Aptitude Test Scores (overall and each part)

Amount of Financial Aid Needed (for enrolled student populations, add the following):

- Amount of financial aid awarded
- Sources (federal, state, non-government)
- Type (loans, scholarships, work/study)
- Amount of parental support
- Amount of spousal support.

Number of years of applications (for applicants, accepted but not enrolled and First Year Enrollment only)

Number of schools applied to (for applicants, accepted but not enrolled and First Year Enrollment only)

- number of acceptances/rejections/applications withdrawn
- number of schools where interviewed

Specialty preference (if known)

Time out from school

- how long
- reasons (graduate school, marriage and family, armed services, leave of absence for special research, pursuit of other profession or occupation)

Undergraduate institution, name and location (institution awarding degree, and if no degree, last one attended)

Number of years of pre-professional education

Degrees earned prior to entrance

3. Career Choice

Practice plans: Type of Activity

- patient care
- research
- teaching
- administration

Practice plans: Type of Employment

- self-employed
    - solo practice
    - partnerships
    - group practice
- Employee (By Type of Employer)
    - solo practice
    - partners
    - group practice
    - agency (hospital, research laboratory, university, etc.)
    - military

B. PRACTITIONERS

Current sources of information on practitioners are severely limited. Medicine, through the AMA, publish frequent, fairly reliable and broad-ranging information on practitioners. For other professions, however, even counts of total active practitioners must be estimated. Little of the published information (even for medicine) is available by sex. Information on women practitioners is usually produced by "special studies" which provide no comparable data on their male counterparts. Since most of these "special studies" are done infrequently and at irregular intervals, the available data is often out-of-date. Also, obtaining current data on any area of problematic, since the gap between data collection and publication may be years. (For example, the dicennial census data of health professionals, collected in 1970, was not published until 1975).

It is important that the basic information on practitioners (such as that listed below) be collected and published by sex and ethnicity, and that publication delays are not lengthy. Assumptions and beliefs such as "women won't practice once they marry" are a source of resistance to women in the MODVOPPP professions and their accuracy may or may not be borne out by the data, or be alleviated by emerging trends among male practitioners, or may be changing for younger female graduates.

1. Demographic Characteristics

Age

Marital Status

- married
- single
- divorced, separated, widow(er)

Time of marriage (at what point in training or practice)

Number and ages of dependents

Time of dependent's births (at what point in training or practice)

Geographic location of practice

- state
- size of community

2. Type of Employment

Self-employed

- solo practice
- partnership
- group practice

Employee (by type of employer)

- solo practice
- partnership
- group practice
- agency
- military

3. Type of Practice: Primary, Secondary

Specialty

Activity

- patient care
- research
- academic
- administration
- other

Income: primary and secondary

4. Practice and Professional Activity

Active/Inactive

Full-time/Part-time

Number of years worked part-time or inactive

- reasons
- at what age

Board certification or membership by specialty societies

Membership in professional associations (local, state, and national)

- elective offices held
- appointive posts held
- attendance at meetings (frequency)

Publications

C. SCHOOLS

School-by-school information is of primary interest for

1) compliance monitoring purposes and

2) for comparing institutional characteristics to student and applicant data.

Aggregate information on schools is of great interest to researchers to identify the roles of women in the professional training institutions and to locate institutional supports available to women. General information on the student population is covered above under applicant/student data. Information concerning faculty and administrators (below) is designed to highlight the extent of women's participation in the training process, and the availability of role models for women students. The financial information detailed below is intended to demonstrate women student's access to financial support. Again, data must be collected and published by sex and ethnicity.

1. Faculty

Number and percent in academic ladder categories (faculty rank, tenure and non-tenure, "acting")

Number and percent of pre-clinical, clinical

Number and percent of full-time, part-time

Number and percent of department chairpersons

Number and percent of committee chairpersons; members (for both ad hoc and standing committees)

Faculty time (hours per week and percent)

- teaching
- preparation
- research
- administration
- patient care
- committee work
- student counseling
- professional activities
- other

2. Financial

Cost of training per student

- tuition and fees
- books and supplies (by year-in-school)

- basic student budgets
  - married
  - married with children
  - single

Sources of income (amount and percent of total budget)

- Federal
- State
- Tuition and fees
- Clinic income (if applicable)
- Other (gifts, investments, etc.)

Amount and percent of budget for student services

Amount and percent of budget for financial aid

Number and percent of student receiving financial aid

3. Institutional

Interstate contracts for training out-of-state residents

- number of states contracted with
- number of students from each state

Recruitment

- programs
- materials

Admissions

- committee membership structure and composition
- tenure
- procedures and policies re: applicant screening
- procedures and policies re: issues and criteria around which interviews and file reviews focus
- committee training and orientation programs

Curriculum Structure

- type of grading system:

	pre-clinical required	clinical required	elective
graded			
pass/fail			
narrative			
combination			

- curriculum sequence
- flexible (can be extended or shortened)
- special features, including variety of training sites, interdisciplinary approach.
- academic assistance (e.g., tutorial) program
- formal policies outlining program flexibility

Curriculum Content

- required or elective courses in: professional history and ethics; practice management; the health care delivery system and/or appropriate social sciences.
- room in curriculum available for non-professional electives, percent by year-in-school

Organizational Supports: Existence of

- official committee on the status of women
- affirmative action office/officer with women as a clear focus along with minorities
- ombudsperson
- women's groups or organizations which have official support or assistance
- counseling service

Facilities and Services: Availability of

- escort or security services
- changing/locker rooms, on-call rooms
- gowns, gloves for women
- child care facilities

- health services appropriate for women
- housing, assistance in locating housing

Placement services

- programs in locating, obtaining required work experience
- policies, procedures, practices designed to control, influence or monitor experiences in cooperating institutions such as hospitals, clinics or other training sites.
- graduate placement programs

Other

- percent of student membership on key committees
- which committees
- whether student committee members may vote
- how students appointed/elected

III. GENERAL AVAILABILITY OF DATA

The tables in this section summarize the basic sources of available data for each of the MODVOPPP professions. Since the amount and types of data available in any given category varies by profession, the limitations of the data, and notable additional sources, will be discussed individually for each profession. Where there are blank spaces in the tables, none of the data is collected or published to our knowledge.

A. MEDICINE

Medicine comes closest to a model information system and therefore will be discussed in greater detail than other MODVOPPP professions. The American Medical Association (AMA) Physician Information file contains data on all but an estimated 0.7% of the profession. The information on schools, students and applicants derived from the AMA/Association of American Medical Colleges (AAMC) Liaison Committee annual survey of institutions does not always reflect 100% responses, since Harvard Medical School does not report regularly.

Data on applicants and students is reported annually in the form of "Datagrams" in the Journal of Medical Education (JME) in various issues throughout the year. (JME is published by the AMC). This data is also published yearly in the Journal of the American Medical Association (JAMA) annual report supplement on Medical Education in the United States. Datagram information on applicants contains some comparative data on men and women applicants. "Special studies" are listed where applicable. These studies are generally conducted through special runs of the AMA data system. A "special study" on unsuccessful applicants to medical schools compares data on men and women unsuccessful applicants:

Becker, Marshall H., et al., "A Follow-up Study of Unsuccessful Applicants to Medical Schools", JME, V. 48, Nov. 1973. pp. 991-1001.

A study on career choices of unaccepted applicants to medical schools was conducted by the Office of Health Manpower Studies, School of Health Services at Johns Hopkins in 1974. The study contains data on both men and women. A special study on women applicants does not provide new data but pulls together information from various sources.

Nadelson, Carol, and Notman, Malka, "Success or Failure: Women as Medical School Applicants," Journal of the American Medical Women's Association (JAMWA), V. 29, No. 4, April, 1974, pp 167-172.

Datagrams on students include first-year and total enrollments by sex and ethnicity, and cover trends over a five-year period. Significant "special studies" which include data on women and appear to be most recent are:

Dubé, W.F., "DATAGRAM: Undergraduate Origins of U.S. Medical Students," JME, V. 49, Oct. 1974, pp 1005-1009.

Dubé, W.F., "DATAGRAM: Women Students in U.S. Medical Schools; Past and Present Trends," JME, V. 48, Feb. 1973, pp 186-189.

Johnson, David G. and Sedlacek, William E., "Retention by Sex and Race of 1968-1972 U.S. Medical School Entrants," JME, V. 50, Oct. 1975, pp 925-933.

Gough, Harrison G., "An Attempt to Predict Graduation from Medical School," JME, V. 50, Oct. 1975, pp 940-950 (data from one school only).

Johnson, D.G. and Hutchins, E.B., "Doctor or Dropout? A Study of Medical School Attrition," JME, V. 41, Oct. 1966, pp. 1099-1269.

Basic data on practitioners, some by sex, appears annually in the AMA report "Profile of Medical Practice." Additionally, periodic special studies appear on women practitioners. They occur at irregular intervals and cover different sample populations. They are listed below in order of time of publication:

Dykman, Roscoe A. and Stalnaker, John M., "Survey of Women Physicians Graduating from Medical School 1925-1940, JME, V. 32, 1957, pp 3-38. (sample population graduating 1925-40 inclusive.)

Powers, Lee, Parmelle, Rexford D., and Wiesenfelder, Harry, "Practice Patterns of Women and Men Physicians," JME, V. 44, June 1969, pp 481-491. (sample from graduates 1931, 1936, 1941, 1946, 1951 and 1956)

Pennell, Maryland Y., and Renshaw, Josephine E., "Distribution of Women Physicians" Annual Study, women data only. JAMWA.

Additional data on the distribution of men and women physicians are available in:

Roback, G.A., "Distribution of Physicians in the U.S., 1973), AMA, Chicago 1971, (note: data for specialty by year and sex available for 1963, 1967, 1970-74 from "Distribution, Selected Characteristics and Special Tabulations"from the AMA Physician Masterfile)

A good overall resource is:

Lopate, Carol, Women in Medicine, Johns Hopkins Press, Baltimore, 1968.

MEDICINE

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants Demographic Characteristics	AMA/AAMC Liaison Com. on Medical Educ.; Also AAMC Div. of Student Studies	AMCAS and MCAT Registration	Datagrams: Journal of Medical Education (AAMC)	Annual; Also Special Studies	Not all data regularly published by sex; available through Liaison Committee, but requires special permission. No ethnic data prior to 1969.
Formal Qualifications and Performance	SAME	SAME	SAME	SAME	SAME
Career Choice	SAME	SAME	SAME	SAME	SAME
First Year Enrollment Demographic Characteristics	AMA/AAMC Liaison Committee on Medical Education	Annual Survey (Liaison Committee)	AMA - Medical Education in the US;also, periodic articles in JAMA, JME	ANNUAL	Data by sex available but requires special permission and data runs considerable information already published by sex; numerous special studies; no ethnic data prior to 1969.
Formal Qualifications and Performance	SAME	SAME	SAME	SAME	SAME
Career Choice	SAME	SAME	SAME	SAME	SAME
Student Body Demographic Characteristics	AMA/AAMC Liaison Committee on Medical Education	Annual Survey (Liaison Committee)	AMA - Medical Education in the US; also, periodic articles in JAMA, JME	ANNUAL	Begin as "Education Number" of the AMA Journal in 1901; also, same as above.
Formal Qualifications and Performance	SAME	SAME	SAME	SAME	SAME
Career Choice	SAME	SAME	SAME	SAME	SAME

MEDICINE (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners					
Demographic Characteristics	AMA, Center for Health Services Research and Development	Physician Masterfile and Periodic Survey of Physicians	AMA - Profile of Medical Practice and Socioeconomic Issues of Health	Annual	Physician Masterfile contains data on all but 0.7% of the profession. Most comprehensive practice data
Type of Employment	Same	Same	Same	Same	-
Type of Practice	Same	Same	Same	Same	-
Practice & Professional Activity	Same	Same	Same	Same	-
Schools					
Faculty	AAMC	AAMC Annual Survey of Medical Schools	AAMC Directory of American Medical Education	Annual	-
Administration	Same	Same	Same	Same	-
Financial	Same	Same	Same See Comments	Same	Financial Aid information also available from BHRD, How Medical Students Finance Their Educations and AMA, Socioeconomic Issues of Health.
Institutional	Same	Same	Same; and Admissions info in Medical School Admissions Requirements	Same	-

AMA - American Medical Association
AAMC - Association of American Medical Colleges
AAMCAS - Association of American Medical Colleges Application Service
MCAT - Medical College Aptitude Test

JME - Journal of Medical Education
JAMA - Journal of the American Medical Association
BHRD - Bureau of Health Resources Development, HEW

B. OSTEOPATHIC MEDICINE

The American Osteopathic Association (AOA) is one of the three professional associations which maintain a student information file as an integral part of the total data system for the profession (medicine and podiatry and the other two). Vital data is collected from students when they graduate and the data are maintained as a means of complementing data from other sources. Much of the data we specify as desirable for students, however, is not published by the AOA, but is maybe available through the association. There is no source of data on applicants, and the published student data is not generally displayed by sex. Detailed information on schools is not collected. The Education Annual Supplement to the AOA Journal began in 1973, and data for preceding years may be found in regular AOA Journal issues. Information was not collected regularly in the early years of the profession.

The existing data on practitioners is probably fairly comprehensive because of the student registration program, and detailed practice records may be kept but are not published.

OSTEOPATHIC MEDICINE

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants					
Demographic Characteristics	AOA, Bureau of Undergraduate Education	Annual Survey of Institutions	AOA Journal, Education Annual Supplement	Annual	Education Annual first edition published in 1973. Data for preceeding years in JAOA or available through AOA. No data by sex, ethnicity
Formal Qualifications and Performance	Same	Same	Same	Same	Several colleges conducting special studies correlating qualifications to success in Professional training
Career Choice					
First Year Enrollment					
Demographic Characteristics	AOA, Office of Education;AACOM, Department of Educational Services	Annual Survey of Institutions	AOA Journal, Education Annual Supplement	Annual	Education Annual First Edition published in 1973. Data for previous years in JAOA or available through AOA. No data by sex, ethnicity.
Formal Qualifications and Performance	Same	Same	Same	Same	Several Colleges conducting special studies (See above).
Career Choice					
Student Body					
Demographic Characteristics	AOA, Office of Education, AACOM, Dept. of Educational Services	Annual Survey of Institutions	AOA Journal, Education Annual Supplement	Annual	The AOA Office of Education is now working to develop student data for the period of the last 10 years.
Formal Qualifications and Performance	Same	Same	Same	Same	
Career Choice					

OSTEOPATHIC MEDICINE (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners Demographic Characteristics	AOA	Graduate Registration, Membership Records and Licensure Data	AOA Yearbook and Directory of Osteopathic Physicians	Annual	Comprehensive Physician Records, little practice data available
Type of Employment	Same	Same			Same
Type of Practice	Same	Same			Same
Practice & Professional Activity	Same	Same			Same
Schools Faculty	AOA, Bureau of Professional Education	Annual Survey of Institutions			
Administration	Same	Same	AOA Journal, Education Annual Supplement	Annual	Published data limited to names of administrative staff at each school.
Financial	Same	Same	Same	Same	Financial Aid data only, not available by sex or ethnicity; includes tuition and fees.
Institutional					

AOA - American Osteopathic Association
JAOA - Journal of the American Osteopathic Association

C. DENTISTRY

Excellent information on dental students has been published by the American Dental Association (ADA) in its Annual Report on Dental Education since 1967. Data for previous years is sketchy. Much of the data is not published by sex, but may be made available for research purposes if the researcher is willing to pay for data runs and/or provide the necessary program or programmer. The information on applicants derived from the Application Service (AADSAS) is not reliable, since only 44 of the 58 dental schools presently participate.

As of 1974, the ADA membership records contained data on 102,500 members and 18,500 non-members. The number of dentists unaccounted for is not known. The ADA does not publish detailed practice information on practitioners in the annual directory. But the ADA "Survey of Dental Practice" (every three years) is more specific. What data is published is rarely presented by sex or ethnicity.

In addition to the association sources, a significant research project on women in dentistry was completed in 1975 which includes much of the basic data we consider desirable for students (including the Career Choice category). The study was done by Jeanne A. Coombs for her Ph.D. at Harvard School of Public Health and includes a 100% sample (66% return totalling 419 women) of women dental students in 1973-74 and a matched sample of 557 men with a return rate of 75% (N=417). The two manuscripts contained in the (unpublished) dissertation are slated for publication in the Journal of Dental Education and the Journal of Health and Social Behavior. However, much valuable raw data in the dissertation does not appear in the manuscripts.

Another important non-association source of data is the survey of dentists conducted by the American Association of Dental Practitioners under contract to the Division of Dental Health, National Institutes of Health (NIH). The survey has been conducted by questionnaire at the time of annual or biennial registration in 1965 and again in 1967. The response rate (by state) varies from 70 to 99%, with an average of 90%. The publications resulting from the survey are available through the Division of Dental Health, and the amount of data available by sex is not known.

DENTISTRY

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants					
Demographic Characteristics	ADA, Division of Educational Measurements	DAT Program; AADSAS but only 44 of 55 schools	ADA Annual report Supplement	Annual	Confidential material information available but not published by sex.
Formal Qualifications and Performance	Same	Same	Same	Same	Limited to test scores.
Career Choice	Special studies				
First Year Enrollment					
Demographic Characteristics	ADA, Division of Educational Measurements	Annual survey of Institutions	ADA Annual Report and Minority Report Supplement	Annual	Limited information published information available but not published by sex. Data from 1967 on only
Formal Qualifications and Performance	Same	Same	Same	Same	Same
Career Choice	Special Studies				
Student Body					
Demographic Characteristics	ADA, Division of Educational Measurements	Annual Survey of Institutions	ADA Annual Report and Minority Report Supplement	Annual	Limited information published (eg. attrition information collected but not published) information available but not published by sex. Data from 1960 on.
Formal Qualifications and Performance	Same	Same	Same	Same	
Career Choice	Special Studies				

DENTISTRY (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners Demographic Characteristics	American Dental Association	Membership Records and Survey of Practice, every 3 years	Assoc. Directory, "Distrib. of Dentists in the U.S." and "Survey of Dental Practice"	Annual Every 3 years Same	Data available by sex but would require expensive data run
Type of Employment	Same	Same			Same
Type of Practice	Same	Same			Same
Practice & Professional Activity	Same	Same			Same
Schools Faculty	ADA, Division of Educational Measurements	Annual Survey of Institutions	ADA Annual Report Supplements	Annual	Not collected by sex or ethnicity, where applicable
Administration	Same	Same	Same	Same	Same
Financial	Same And BHRD	Same			No financial aid data collected by Associations.
Institutional	Same	Same			Limited information collected.

ADA - American Dental Association
AADSAS - Association of American Dental Schools Application Service
DAT - Dental Aptitude Test
BHRD - Bureau of Health Resources Development, HEW

D. VETERINARY MEDICINE

Very little data is collected by the American Association of Veterinary Medical Colleges (AAVMC) in their annual survey of institutions. What data is available is published in the Journal of the American Veterinary Association (JAVMA) on an annual basis and includes enrollments by year-in-school, sex, and ethnicity. Some information on the institutions regarding finances, curriculum, etc., is collected, but does not appear to be published. Data on practitioners is based on the AVMA membership files, and, as such, is not comprehensive. The AVMA is currently working with the Bureau of Health Resources Development (BHRD) of HEW to develop a more comprehensive Veterinary Manpower Information system (a preliminary analysis of the existing system and recommendations report, the Veterinary Manpower Information System, is available through BHRD). The AVMA membership files include 21,658 members, 2,590 inactive members, plus record cards for 4,000 non-members. A directory verification survey is conducted biennially. Information on practitioners is published in the AVMA Directory (annual), which does not tally practice patterns, etc. Some data on practitioners by sex is available through the AVMA, and the Women's Veterinary Medical Association collects data on practice patterns of their members.

VETERINARY MEDICINE

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants Demographic Characteristics					Available from individual schools only.
Formal Qualifications and Performance					
Career Choice					
First Year Enrollment Demographic Characteristics	American Association of Veterinary Medical Colleges	Annual Survey of Institutions	AVMA *Journal*	Annual	Limited data collected, not collected by sex, ethnicity
Formal Qualifications and Performance	Same	Same			Same
Career Choice					
Student Body Demographic Characteristics	American Association of Veterinary Medical Colleges	Annual Survey of Institutions	AVMA *Journal*	Annual	Limited data collected, not collected by sex, ethnicity
Formal Qualifications and Performance	Same	Same			Same
Career Choice					

VETERINARY MEDICINE (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners Demographic Characteristics	American Veterinary Medical Association	Membership records and licensure data	BHRD, *The Veterinary Manpower Reporting System*, AVMA Directory	One time only Annual	Not comprehensive data; AVMA contract with BHRD to improve data collection system. Listing only.
Type of Employment	Same	Same	Same	Same	Same
Type of Practice	Same and Specialization Boards or Special Studies	Certification AVMA Membership Records	Same	Same	Same
Practice & Professional Activity	American Veterinary Medical Association	Membership records	Same	Same	Same
Schools Faculty	American Association of Veterinary Medical Colleges				
Administration	Same				
Financial	AVMA and BHRD	Annual Survey of Institutions			No financial aid data collected.
Institutional	American Association of Veterinary Medical Colleges				

AAVMC - American Association of Veterinary Medical Colleges
AVMA - American Veterinary Medical Association
BHRD - Bureau of Health Resources Development, HEW

E. OPTOMETRY

The American Optometric Association (AOA) Council on Optometric Education collects a small amount of data on applicants and students. However, the data (published in the AOA Journal or unpublished) from the AOA occasionally conflicts with other data sources (e.g., Earned Degrees Conferred, see General Sources section below). The existing data is available by sex from the AOA.

The AOA is presently engaged in developing an optometric manpower information system. The initial work was begun through a contract with the National Institute of Health, and a state-by-state survey of licensed optometrists was conducted through licensing agencies. The results of this survey, conducted in 1971, are available through the Division of Manpower Intelligence (DMI) of HEW. The exact number of optometrists, both active and inactive, is not presently known by the AOA, so existing practitioner data is not comprehensive, and data is not regularly available. The current AOA membership records are primarily used for association business rather than for manpower information.

Data on schools and students (including some career choice information) appears in the report of the National Study of Optometric Education, Optometry, Education for the Profession, published in 1973. The study itself began in 1971 and continued through 1972. It provides the most recent source of school data.

OPTOMETRY

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants Demographic Characteristics	AOA Council on Optometric Education	Annual Survey of Institutions and OCAT registration	AOA Journal	Annual	Some data by sex OCAT begun 1972-73 not used by all until 1976-1977
Formal Qualifications and Performance	Same	Same	Same	Same	Same
Career Choice					
First Year Enrollment Demographic Characteristics	AOA Council on Optometric Education	Annual Survey of Institutions	AOA Journal	Annual	Some data by sex
Formal Qualifications and Performance	Same	Same	Same	Same	Same
Career Choice					
Student Body Demographic Characteristics	AOA Council on Optometric Education	Annual Survey of Institutions	AOA Journal and report of the National Study of Optometric Education 1973	Annual One time only	Some data by sex
Formal Qualifications and Performance	Same	Same	Same	Same	Same
Career Choice	National Study of Optometric Education	Questionnaire Survey	Report, 1973	One time only	Not available by sex

OPTOMETRY (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners	AOA	Membership records			
Demographic Characteristics	Int'l Assoc. of Boards of Exam. in Optometry	State Licensing Board surveys	DMI, Licensed Optometrists in (State),(Year)	One time only	
Type of Employment	NCHS	US Census, Mail Surveys	NCHS, Optometrists Employed in Health Services, 1968	One time only	
Type of Practice	Same	Same	Same	Same	
Practice & Professional Activity	Same	Same	Same	Same	

Schools Faculty	ASCO, AOA, and National Study of Optometric Education	ASCO: Annual Survey Survey	Report, 1973	One time only	ASCO recently active; AOA has more data Not by sex, ethnicity
Administration					
Financial	Same	Same	Same	Same	Financial aid data collected on awards granted by schools only, not by sex
Institutional	Same	Same	Same	Same	

AOA - American Optometric Association
OCAT - Optometric College Aptitude Test
NCHS - National Center for Health Statistics; HEW
DMI - Division of Manpower Intelligence; HEW
ASCO - Association of Schools and Colleges of Optometry

F. PODIATRY

Information on podiatry students and schools is collected through the American Association of Colleges of Podiatric Medicine (AACPM) annual survey of institutions. Data collected on students is minimal, covering enrollment, attrition, geographic origin, prepodiatric training and degrees, sex and ethnicity. Only ethnicity data is collected on student qualification (e.g., GPAs, test scores, class standings). Reports on this data appear regularly in the Journal of Podiatric Medical Education. School data which is collected but does not appear to be published covers budget, curriculum, faculty and administration.

The American Podiatry Association (APA) has developed a manpower information system. The APA holds complete files on 4,800 members and partial files on 3,200 non-members. Based on a survey of the profession conducted in 1970 by the National Center for Health Statistics (NCHS) it is estimated that these files account for 97% of the profession. The 1970 survey results are published in two separate reports:

Podiatry Manpower: A General Profile (NCHS), 1973.

Podiatry Manpower: Characteristics of Clinical Practice, (NCHS), 1974.

Also, the results of special studies of podiatric manpower conducted in 1960, 1964 and in 1970 are reported in the Journal of the American Podiatry Association (JAPA).

A student data cycle has been added to the information system. Data is collected each year on graduates and is used to update practitioner information. Practitioner information is published annually by the APA in the American Podiatry Association Directory, but little data is presented by sex. Presumably, since the APA data system is relatively complete, useful data on men and women practitioners may be obtained through special studies using the APA data system.

PODIATRY

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants					
Demographic Characteristics	AACPM	CPAT Registration and AACPMAS	Journal of Podiatric Med. Education	Annual	Data not published by sex, ethnicity
Formal Qualifications and Performance	SAME	SAME	SAME	SAME	SAME
Career Choice					
First Year Enrollment					
Demographic Characteristics	AACPM	Annual Survey of Institutions	APA Journal	Annual	Data not published by sex, ethnicity
Formal Qualifications and Performance	SAME	SAME	SAME	SAME	SAME
Career Choice					
Student Body					
Demographic Characteristics	AACPM	Annual Survey of Institutions	APA Journal	Annual	Data not published by sex, ethnicity
Formal Qualifications and Performance	SAME	SAME	SAME	SAME	
Career Choice					Some individual school research, published in Journal of Podiatric Med. Education

PODIATRY (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners					
Demographic Characteristics	APA and NCHS	Special Study Surveys National Survey	APA Journal 1.Podiatry Manpower; char. of clin. practice. 2.Pod.Manpwr;a general profile.	1960, 1964, 1970 1970 only	Little data by sex Some data by ses; other available but not published by sex.
Type of Employment	SAME	SAME	SAME	SAME	
Type of Practice	SAME	SAME	SAME	SAME	
Practice & Professional Activity	SAME	SAME	SAME	SAME	
Schools					
Faculty	AACPM	Annual Survey of Institutions			
Administration	SAME	SAME			
Financial	SAME	SAME			
Institutional	SAME	SAME			

AACPM - Association of American Colleges of Podiatric Medicine
APA - American Podiatry Association
CPAT - Colleges of Podiatry Aptitude Test
NCHS - National Center for Health Statistics; HEW

G. PHARMACY

The American Association of Colleges of Pharmacy (AACP) assumes primary responsibility for data collection for all aspects of the profession. There is no single or major professional association which represents all practitioners of the profession, but rather numerous smaller associations reflecting the specific service delivery mode: hospital pharmacy, retail pharmacy, pharmacists employed by pharmaceutical manufacturers. For example, hospital pharmacists often belong to a union (1199) rather than the professional association, but overlapping memberships are possible. The practitioner records maintained by the American Pharmacy Association (APhA) is focused toward association business, rather than pharmacy manpower data. APhA members are most often retail pharmacists.

The AACP collects school and student data annually from the training institutions. Student data is published regularly in the American Journal of Pharmaceutical Education. The published information covers only minimal enrollment by sex and ethnicity, and geographic origin data. Published school data covers only faculty.

Practitioner data is handled through the manpower information system of AACP, funded through the National Institutes of Health (NIH). The basic data for the system was collected by the National Association of Boards of Pharmacy (NABP) through a mail survey of registered pharmacists. There is presently no means of collecting data on non-registered pharmacists (such as those engaged in industrial employment) other than school faculty. The results of the 1973 survey are published in state-by-state pamphlets, with nearly all practice data displayed by sex.

> "Registered Pharmacists in (state), 1973", Division of Manpower Intelligence (DMI), HEW, 1974.

The baseline data from the 1973 survey is updated through re-licensure and graduate information from schools.

FINAL REPORT: VOLUME I
CONTRACT: HEW OS-74-291
APPENDIX F

PHARMACY

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants Demographic Characteristics					
Formal Qualifications and Performance					
Career Choice					
First Year Enrollment Demographic Characteristics	American Association of Colleges of Pharmacy	Annual Survey of Institutions	American Journal of Pharmaceutical Education	Annual	Minimal data; some published by sex
Formal Qualifications and Performance					
Career Choice					
Student Body Demographic Characteristics	American Association of Colleges of Pharmacy	Annual Survey of Institutions	American Journal of Pharmaceutical Education	Annual	Minimal data; some published by sex
Formal Qualifications and Performance					
Career Choice					

PHARMACY (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners	APhA	Membership Records	Directory	Annual	Incomplete Practitioner data
Demographic Characteristics	National Assoc. of Boards of Pharmacy	Survey of Registered Pharmacists	"Registered Pharmacists in (state) 1973" DMI	1973	Basis for Manpower Information System, AACP
Type of Employment		Licensure records	NABP Proceedings	Annual	Updates Manpower Information System. All practice data published by sex plus special studies on women in Pharmacy (no men data) in the APhA Journal, November, 1973
	Same	Same	Same	Same	
Type of Practice	Same	Same	Same	Same	
Practice & Professional Activity	Same	Same	Same	Same	
Schools					
Faculty	American Association of Colleges of Pharmacy		Roster of Teaching Personnel in Colleges of Pharmacy	Annual	Summary in "The Status of Women in Pharmaceutical Education" AACP
Administration					
Financial					
Institutional					

AACP - American Association of Colleges of Pharmacy
APhA - American Pharmacy Association
NABP - National Association of Boards of Pharmacy

H. PUBLIC HEALTH

There is no central source of information on students or practitioners in Public Health due to the fragmentary nature of this field. The problems inherent in collecting data on the public health fields include the fact that training programs exist in a wide variety of institutions (undergraduate and graduate, business administration or public health divisions, for example); the programs with similar names may differ in length and content of training; and similar programs may carry different titles and confer different degrees. The American Public Health Association (APHA) can provide, on request, data on its membership, which represents an unknown, but certainly not comprehensive, proportion of the professionals working in the various fields and includes non-professional members as well. Data on schools may be obtained to a limited degree through the field-specific associations--primarily lists of accredited programs. APHA presently accredits programs at 19 schools, and keeps degrees-conferred data on these programs. The single most useful sources for Public Health data have been Earned Degrees Conferred and Fall Enrollments in Higher Education (see general sources, below). Other sources include:

1. Students: Matthews, Margie, Accreditation as the Force in Professionalization: The Accreditation of Schools of Public Health by the American Public Health Association, unpublished doctoral dissertation.

2. Practitioners: White, Paul, et al., A Survey of 1956-1972 Graduates of American Schools of Public Health, Johns Hopkins University, December, 1974.

Also, the Health Resources Analysis section of HEW is currently working on a Public Health manpower information system which will cover applicants, students, graduates, faculty, research, and school fiscal data. A preliminary report was expected in 1975, and basic data systems completed in 1977.

PUBLIC HEALTH

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Applicants Demographic Characteristics					
Formal Qualifications and Performance					
Career Choice					
First Year Enrollment Demographic Characteristics	APHA	Annual Survey of APHA Accredited Institutions			Degrees conferred only available through APHA
Formal Qualifications and Performance					
Career Choice					
Student Body Demographic Characteristics					
Formal Qualifications and Performance					
Career Choice					

PUBLIC HEALTH (CONTINUED...)

Data Categories	Who Collects	(Source) How Collected	Where Published	Frequency of Publication	Comments
Practitioners Demographic Characteristics					
Type of Employment					
Type of Practice	White, et al. Special Study	Survey of Graduates	See Text		Some data by sex; limited to Graduates 1956-1972
Practice & Professional Activity					

Schools Faculty					
Administration					
Financial					
Institutional					

APHA - American Public Health Association

I. GENERAL SOURCES

In this section are listed sources which cover some or all of the MODVOPPP professions which we found to be most useful since they pull together scattered, and often hard-to-find, data from a variety of sources. Public Health data is frequently omitted from these sources, primarily since so little data exists.

Federal Data Source: A massive body of data is collected from various sources by a number of federal agencies. Since the government generally relies on the MODVOPPP professional and educational associations as basic sources for data, federal agencies encounter the same gaps in information systems that URSA has. In an effort to streamline data collection and to fill the gaps in the available data, a Health Data Policy Committee (HDPC) was set up by HEW in April of 1974 to coordinate the data efforts of the various agencies within HEW which collect (and publish, in some cases) either general purpose or program specific health statistics. The HDPC maintains liaison with representatives from the Office of Management and Budget (OMB), Department of Defense (DoD), and the Veterans Administration (VA) in regard to their data collection efforts and needs. As a first step, the MDPC has taken an inventory of HEW agency data collection projects/systems. The inventory results are published in: Health Statistics Plan, Fiscal Years 1976-77, Public Health Service, DHEW, November, 1973.

Projects listed in the Plan which have not been completed but which will be of assistance in the future include the following efforts (all located in Health Resources Administration [HRA], listed by profession.

1. Medicine:

- Medical education outcomes - a longitudinal study of medical students' career choice by specialty, type and location of practice. Carried out by University of New Mexico medical school; the project terminated in 1975, and some preliminary documents are available.
- Medical school faculty roster

2. Osteopathic Medicine:

- Osteopathic medicine applicant and student information system

3. Dentistry:

- Analysis of data from a National Survey of Dentist Practice Characteristics (to be a journal article).
- Dental education information system, to cover institutions, facilities, applicants and students. Two separate projects involved.
- Dental manpower statistics

4. Optometry:

- Optometry applicant/student information system
- Optometry manpower survey

5. Pharmacy:

- Survey of pharmacists
- Survey of senior pharmacy students

6. Public Health:

- Schools of Public Health data system

7. Other:

- Evaluation of the effectiveness of EEO Policies and Practices in Health Professions Schools
- Survey of Health Professions Educational Facilities
- Inventory of state support of Health Manpower Training Programs
- Private foundations supporting health manpower education and training: An Inventory, 1971

8. Federal Publications:

a. HEW

Minorities and Women in the Health Fields: Applications, Students, and Workers.
Resource Analysis Staff, BHRD, HRA, Public Health Service DHEW Pub. No. (HRA) 76-22 June 1974, September 1975.

The Supply of Health Manpower, 1970 Profiles and Projections to 1990
Division of Manpower Intelligence, BHRD, HRA, PHS
Pre-Publication Edition, Feb. 1974
Data by sex; a summary of findings in: The Current and Projected Supply of Health Manpower, RAS/BHRD Report No. 5-17, July 1974.

Recipients of Health Professions Loans and Scholarships, Academic Year 1971-72
Resource Analysis Staff/OBD, BHRD, HRA, PHS
1975 (1972-73 data to be processed 75 or 76)
Additional tables by sex and/or ethnicity may be available on special request.

How Health Professions Students Finance Their Education
Division of Manpower Intelligence, BHRD, HRA, PHS, DHEW Pub. No. (HRA 74-13)
October 1973
Data not published by sex or ethnicity.

Health Manpower Source Book, Manpower Supply and Educational Statistics for Selected Health Occupations, 1968, Section 20.
Bureau of Health Professions Education and Manpower Training, National Institutes of Health (NIH), PHS, HEW
PHS Pub. No. 263, Section 20, 1969
Presents historical data back into the 19th Century. No data by sex or ethnicity. Includes all MODVOPPPs and allied health professions.

Earned Degrees Conferred

National Center for Educational Statistics, Education Division/Office of Education, DHEW
Annual
All data by sex.

Fall Enrollment in Higher Education

National Center for Educational Statistics, Education Division
Annual
All data by sex.

b. Health Resources Statistics

National Center for Health Statistics, HRA, PHS
Annual
No Data by sex.

c. Costs of Education in the Health Professions, Parts I and II

Conducted by National Academy of Sciences, Institute of Medicine
BHRD, HRA, PHS, DHEW Pub. No. (HRA) 74-32
January 1974
Subject to serious criticism in regard to methodology and the small samples of not necessarily representative schools for the smaller professions. Was used as the basis for federal capitation funding allocations.

d. Decennial Census Data for Selected Health Occupations: United States, 1970

National Center for Health Statistics, HRA, PHS,
DHEW Pub. No. (HRA) 76-1231

9. Other General Sources

Data books published by non-federal sources are listed below. We found the Chart Book to be especially useful. Some projects underway at the National Planning Association (NPA) which may be helpful in the future include:

- Financing of Students in Medical Schools, Osteopathic Medical Schools and Dental Schools (funded by Robert Wood Johnson Foundation)

- NPA has purchased copies of the tapes used to produce How Health Professions Students Finance Their Educations. No tables have been run by sex to our knowledge.

- Women in Health Careers, Chart Book for International Conference on Women in Health, Pennel, Maryland and Showell, Shirlene
  American Public Health Association, Washington D.C. June, 1975

- Professional Women and Minorities, A Manpower Data Resource Service, Vetter, Betty M. and Babco, Eleanor
  Scientific Manpower Commission
  May, 1975, Semi-annual up-dates and Supplements

J. PRIORITIES FOR DATA SYSTEMS

The health professions applicant/student and manpower data systems currently being set up for all MODVOPPP professions through federal (HEW) contracts will ultimately provide most of the data we specify as important for compliance monitoring and research. Clearly, the resulting data must be made available by sex and by ethnicity for maximum utility. In this section, we will explore the most significant gaps in existing data, without reference to the developing data systems. Where the developing systems may omit collecting some of this data, we recommend that the systems be augmented to include the missing data.

GAP 1: Applicants

Data on applicants is published for some categories by a few of the professions, but gaps exist more often than not. Applicant data on, demographic characteristics, performance and qualifications and, profession, practice and specialty choices are especially useful in comparison to first year enrolled students (FYE) to determine how the two groups differ, how men and women in the two groups differ. Also, we would recommend periodic follow-up studies of rejected applicants, by sex, to determine:

- how many are repeat applicants, how many times;
- how many reapply;
- other professions applied to; rejected by;
- where do they go? (allied health, other MODVOPPP professions, research, graduate school teaching, out of health-related occupations?).

GAP 2: Students

The areas where data is generally sketchy or non-existent include:

- attrition data crossed against demographic, career choice and performance and qualification data which enables the researcher to determine who drops out, why, and frequency;
- Special studies of students who elect shortened or extended training programs (where available) and students who drop out for a year to determine what factors influence a departure from the normal training process;
- Periodic surveys of student financing (for all MODVOPPP students) to compare men and women on amount of indebtedness, level of spousal support (by percent of men/women married), extent of need, adequacy of support;

- Problems students encounter in obtaining financing should be examined, including gaining parental support, bank loans, scholarships. Should include information on whether men or women students would consider entering into federal support programs requiring service agreements in which the student has little or no control over the service location;
- A special study should be conducted on what factors influence specialty, type and location of practice choices through a survey upon graduation on what students are doing next and their reasons (e.g., positive choices, opportunities ruled out and why).

GAP 3: Practitioners

Detailed information on practitioners is generally available in medicine, but nearly non-existent for most other MODVOPPPs. We recommend:

- Better and more frequent demographic data and the demographic data be run against activity levels and practice patterns to determine what factors affect the practitioner's level of participation in practice and in the profession.
- Improved studies of active/inactive, full-time and part-time practitioners, including:
  - what else are they doing?
  - why are they doing that instead of practice?

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TABLE A

NUMBER AND PERCENT OF ACTIVE PRACTITIONERS IN MODVOPPP HEALTH PROFESSIONS BY SEX: DECEMBER 31, 1970

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Total	311,210	12,000	102,220	25,920	18,440	7,100	129,290	N/A
Men	289,736	11,148	98,950	24,600	18,050	6,800	117,620	N/A
Women	21,474	852	3,270	1,320	390	300	11,670	N/A
% Men	93.1	92.9[a]	96.8	94.9	97.9	96.0	91.0	N/A
% Women	6.9	7.1[a]	3.2	5.1	2.1	4.0	9.0	N/A

SOURCE: *The Supply of Health Manpower, 1970 Profiles and Projections to 1990, Division of Manpower Intelligence, Bureau of Health Resources Development, Health Resources Administration, Public Health Service, Department of Health, Education and Welfare, 1974.*

[a] *Percentages estimated from subtracting DOs from MDs with MDs by sex in Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

TABLE B: RANK ORDER COMPARISONS AMONG PROFESSIONS ON SELECTED PRACTITIONER AND PRACTICE CHARACTERISTICS FOR MOST RECENT YEAR OF AVAILABLE DATA

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
SIZE: 1970[a]								
TOTAL	311,210	12,000	102,220	25,900	18,400	7,100	129,300	N/A
Men	289,736	11,148	98,950	24,600	18,050	6,800	117,620	N/A
Women	21,474	852	3,270	1,320	390	300	11,670	N/A
RANK	*1*	*6*	*3*	*4*	*5*	*7*	*2*	*N/A*
NUMBER OF ACTIVE[a] WOMEN PRACTITIONERS: 1970	21,474	852	3,270	1,320	390	300	11,670	N/A
Percent of All Practioners	6.9%	7.1	3.2	5.1	2.1	4.0	9.0	N/A
RANK	*1*	*5*	*3*	*4*	*6*	*7*	*2*	*N/A*
SELF-EMPLOYED[b] PRACTIONERS								
% Women	48.1%	N/A	80.0	78.7	79.8	91.0	N/A	N/A
RANK	*5*		*2*		*4*	*3*	*N/A*	N/A
% Men	75.3%	N/A	94.0	N/A	88.4	93.8	N/A	N/A
RANK	*4*		*1*		*3*	*2*	*N/A*	*N/A*
Year of Data	1965		1967-70	1974	1965	1970		

SOURCE: [a] *See Appendix G, Table A*
[b] *Women in Health Careers, Chart Book for International Conference on Women in Health, Pennell and Showell, June, 1975*

CONTRACT: HEW OS-74-291

TABLE C

RANK ORDER COMPARISONS AMONG PROFESSIONS ON SELECTED STUDENT CHARACTERISTICS FOR MOST RECENT YEAR OF AVAILABLE DATA

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1. Number of Schools (1973-1974)(1)	114	7	58	18	12	5	73	19(2)
RANK	*1*	*7*	*3*	*5*	*6*	*8*	*2*	*4*
2. Number of Students (1974-75)								
TOTAL	53,554	3,139	20,146	6,005	3,678	1,835	21,287	5,758[c]
Male	43,893	2,872	18,785	4,784	3,332	1,776	15,258	3,340[c]
Female	9,661	267	1,361	1,221	346	59	6,029	2,418[c]
% Female	18.0	8.5	6.8	20.3	9.4	3.2	28.3	42.0[d]
RANK	*4*	*6*	*7*	*3*	*5*	*8*	*2*	*1*
3. Number of First Year Students (1974-75)								
TOTAL	14,763	974	5,617	1,669	988	551	5,919	2,921[c]
Male	11,488	868	4,986	1,262	875	529	4,320	1,548[c]
Female	3,275	106	631	407	113	22	1,599	1,373
% Female	22.2	10.9	11.2	24.4	11.4	4.0	26.3	47.0[d]
RANK	*4*	*7*	*6*	*3*	*5*	*8*	*2*	*1*
4. Applicant to Enrollment Ratio	2.7.1 (1973-74)	N/A	2.7/1 (1974-75)	8 or 9/1[a]	2.8/1 (1971)	N/A	2.9/1[b]	N/A
RANK	*4/5*		*4/5*	*1*	*3*		*2*	

SOURCE: (1) *Women in Health Careers, Health Resources Administration, The Current and Projected Supply of Health Manpower. A Summary of Findings, Department of Health, Education and Welfare, July, 1974.*

(2) *Association of Schools of Public Health*

NOTES: *Numbers in Italics denote rank.*

[a] *No data available, estimate from field work. Applicant definition more inclusive than other professions.*

[b] *Estimate average from field work.*

[c] *Excludes Puerto Rico.*

[d] *Estimate since exact figures unknown.*

TABLE D

NUMBER OF FIRST YEAR FEMALE ENROLLMENTS IN MODVOPPP HEALTH PROFESSIONS SCHOOLS AS AVAILABLE, FOR ACADEMIC YEARS: 1968-69 THROUGH 1974-75

YEAR	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY[a]	PODIATRY[b]	PHARMACY	PUBLIC[g] HEALTH
1968-69	889	21	38	120	-	N/A	1,084	N/A
1969-70	948	14	58	146	20	N/A	1,256	N/A
1970-71	1,256	17	94	144	33	9	1,349	N/A
1971-72	1,693	29	147	222	39	8	1,683	N/A
1972-73	2,300	56[c]	224	285	71	11	2,094	N/A
1973-74	2,786	83	391	364[d]	108	22[b]	1,599[e]	N/A
1974-75	3,275[f]	106[f]	631[f]	407[d]	133	27[b]	-	1,199[g]

SOURCES: *Minorities and Women in the Health Fields, Bureau of Health Resources Development, Health Resources Administration, Public Health Service, Department of Health, Education and Welfare, 1974, except:*

[a] *Unpublished Statistical tables from the American Optometric Association, St. Louis, Missouri.*

[b] *Unpublished statistical tables from the American Association of Colleges of Podiatry*

[c] *Journal of the American Osteopathic Association, Education Annual, 1974.*

[d] *Unpublished data from the American Veterinary Medical Association, Chicago, Illinois.*

[e] *American Journal of Pharmaceutical Education, "Report on Enrollment in Schools and Colleges of Pharmacy, First Semester, Term or Quarter, 1973-1974", 1974.*

[f] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

[g] *Association of Schools of Public Health; estimate since some unknown; excludes Puerto Rico.*

TABLE E

FIRST YEAR FEMALE ENROLLMENTS IN MODVOPPP HEALTH PROFESSIONS SCHOOLS AS AVAILABLE FOR ACADEMIC YEARS 1968-69 THROUGH 1974-75

PERCENT WOMEN FIRST YEAR ENROLLMENT	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY[a]	PODIATRY[b]	PHARMACY	PUBLIC HEALTH
1968-69	9.0%	4.0	0.9	9.0	-	-	20.1	N/A
1969-70	9.1%	2.4	1.3	10.9	2.5	-	22.7	N/A
1970-71	11.1%	2.7	2.1	10.1	3.7	2.5	23.7	N/A
1971-72	13.7%	4.3	3.1	15.3	5.3	2.0	25.8	N/A
1972-73	16.8%	6.9[c]	4.2	18.0	7.9	2.3	27.7	N/A
1973-74	19.7%	9.0	7.2	22.8[d]	11.3	4.0	29.0[e]	N/A
1974-75	22.2%[f]	10.9[f]	11.2[f]	24.4[d]	-	4.8	-	47.0[g]

SOURCE: *Minorities and Women in the Health Fields, Bureau of Health Resources Development, Health Resources Administration, Public Health Service and Department of Health, Education and Welfare, 1974 except:*

[a] *Unpublished statistical tables from the American Optometric Association, St. Louis, Missouri.*

[b] *Unpublished data from the American Association of Colleges of Podiatric Medicine, Washington, D.C.*

[c] *Journal of the American Osteopathic Association, Education Annual, 1974.*

[d] *Unpublished data from the American Veterinary Medical Association Association, Chicago, Illinois.*

[e] *American Journal of Pharmaceutical Education, "Report on Enrollment in Schools and Colleges of Pharmacy, First Semester, Term or Quarter, 1973-74", 1974.*

[f] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

[g] *Association of Schools of Public Health; estimate since some unknown; excludes Puerto Rico*

TABLE F
PERCENT CHANGE IN FEMALE FIRST YEAR ENROLLMENT IN MODVOPPP HEALTH PROFESSIONS SCHOOLS FOR SELECTED YEARS

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY[a]	PODIATRY[b]	PHARMACY	PUBLIC HEALTH
1968-69								
1969-70	6.8%	-33.3	52.6	21.7			15.8	N/A
1970-71	32.5%	+21.4	62.1	-1.4			7.4	N/A
1971-72	34.8%	+70.6	56.4	54.2	60.6	-11.1	24.6	N/A
1972-73	35.8%	+93.1[c]	52.4	28.4	82.1	37.5	24.4	N/A
1973-74	21.1%	48.2	42.7	27.7[d]	52.1	100.0	23.7[e]	N/A
1974-75	17.5%[f]	27.7[f]	61.4[f]	11.8[d]	23.1	22.7	----	N/A

SOURCE: *Minorities and Women in the Health Fields, Bureau of Health Resources Development, Health Resources Administration, Public Health Service and Department of Health, Education and Welfare, 1974 except:*

[a] *Unpublished statistical tables from the American Optometric Association, St. Louis, Missouri.*

[b] *Unpublished data from the American Association of Colleges of Podiatric Medicine, Washington, D.C.*

[c] *Journal of the American Osteopathic Association, Education Annual, 1974.*

[d] *Unpublished data from the American Veterinary Medical Association Association, Chicago, Illinois.*

[e] *American Journal of Pharmaceutical Education, "Report on Enrollment in Schools and Colleges of Pharmacy, First Semester, Term or Quarter, 1973-74", 1974.*

[f] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

TABLE 6

TOTAL ENROLLMENT OF STUDENTS IN THE MODVOPPP HEALTH PROFESSIONS SCHOOLS

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1963-64	32,001	1,594	13,691	3,727	1,372	585	10,291	N/A
1964-65	32,428	1,661	13,876	3,864	1,547	622	12,104	N/A
1965-66	32,835	1,681	14,020	4,119	1,745	707	12,495	N/A
1966-67	33,423	1,763	14,421	4,388	1,882	838	13,221	N/A
1967-68	34,538	1,823	14,955	4,623	1,962	926	14,272	N/A
1968-69	35,833	1,879	15,408	4,779	2,203	1,061	14,932	N/A
1969-70	37,669	1,997	16,008	4,876	2,488	1,097	15,323	N/A
1970-71	40,487	2,151	16,553	5,006	2,831	1,148	15,626	N/A
1971-72	43,650	2,304	17,305	5,149	3,094	1,267	16,808	N/A
1972-73	47,546	2,579	18,376	4,439	3,313	1,403	18,956	N/A
1973-74[a]	50,428	2,701	19,369	5,760	3,545	1,578	21,480	N/A

[a] *Data for all are from applications for capitation grants for FY 1973.*

SOURCE: *The Current and Projected Supply of Health Manpower: A Summary of Findings; Health Resources Administration, July, 1974.*

TABLE H: TOTAL FEMALE ENROLLMENT IN MODVOPPP HEALTH PROFESSIONS SCHOOLS:

1968-69 through 1974-75

YEAR	MEDICINE	OSTEOPATHY	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1968-69		53	167	362				
1969-70	3,392	59	174	430	73	10	2,684	N/A
1970-71	3,878	61	231	467	82	16	3,188	N/A
1971-72	4,690	79	334	592	112	16	3,370	N/A
1972-73	6,082	116	511	741	170	21	4,187	N/A
1973-74	7,824	181	836	995	261	40	5,020	N/A
1974-75	9,661	267	1,361	1,221	346	59	6,029	2,282[a]

SOURCE: Women in Health Careers, Health Resources Administration, The Current and Projected Supply of Health Manpower. A Summary of Findings, Department of Health, Education & Welfare, July, 1974.

[a] *Association of Schools of Public Health; estimate since exact figures unknown, excludes Puerto Rico.*

TABLE I

TOTAL FEMALE ENROLLMENT IN MODVOPPP HEALTH PROFESSIONS SCHOOLS: 1968-69 THROUGH 1974-75 (By Percent)

YEAR	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1968-69	8.8%	2.8	1.1	7.6	-	-	18.2	N/A
1969-70	9.0%	3.0	1.1	8.8	2.9	0.9	20.8	N/A
1970-71	9.6%	2.8	1.4	9.3	2.9	1.4	21.9	N/A
1971-72	10.8%	3.4	1.9	11.5	3.6	1.3	24.9	N/A
1972-73	12.8%	4.5	2.8	13.6	5.1	1.5	26.5	N/A
1973-74	15.4%	6.5[a]	4.3	17.6	7.3[a]	2.4	28.3[a]	N/A
1974-75	18.0%[a]	8.5[a]	6.8[a]	20.3[a]	9.4[a]	3.2[a]	-	45.8[b,c]

SOURCE: *Minorities and Women in the Health Fields, Bureau of Health Resources Development, Health Resources Administration, Public Health Service and the Department of Health, Education and Welfare, 1974, except:*

[a] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

[b] *Masters and Doctors degrees combined*

[c] *Associations of Schools of Public Health, DPH or DrPH; excludes University of Puerto Rico.*

TABLE J

FEMALE GRADUATES OF MODVOPPP HEALTH PROFESSIONS SCHOOLS FOR SELECTED YEARS

YEAR	MEDICINE	OSTEOPATHIC MEDICINE[e]	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1968-69	607	8	-	56	4	-	656	418[b]
1969-70	700	12	-	78	23	3	792	459[b]
1970-71	827	11	46[d]	76	12	5	876	492[b]
1971-72	860	19	40	90	18	1	997	636[b]
1972-73	924	14	64	106	17	1	1,150	-
1973-74	1,264	17	92[a]	120	34	4	1,415[a]	-
1974-75	-	46	156	166[a]	33[a]	4[a]	-	799[b,c]

SOURCES: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Health Resources Administration, Public Health Service, Department of Health, Education and Welfare, 1974, except:

[a] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

[b] *Masters and Doctors Degrees*

[c] *Association of Schools of Public Health; excludes University of Puerto Rico.*

[d] *Earned Degrees Conferred (from RFP)*

[e] *Unpublished data from the American Osteopathic Association.*

TABLE K

FEMALE GRADUATES OF MODVOPPP HEALTH PROFESSIONS SCHOOLS: 1968-69 THROUGH 1974-75 (By Percent)

	MEDICINE	OSTEOPATHIC MEDICINE[e]	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1968-69	7.5%	1.8	--	5.6	1.1	--	16.3	33.8[b]
1969-70	8.4%	2.7	--	7.5	5.2	1.2	18.1	35.3[b]
1970-71	9.2%	2.3	1.2[d]	7.4	2.3	2.0	20.1	36.7[b]
1971-72	8.9%	3.9	1.0	8.7	2.6	0.4	22.6	39.4[b]
1972-73	8.9%	2.1	1.5	10.1	2.5	0.4	24.2	--
1973-74	11.1%	3.4	2.0[a]	10.4	4.3	1.3	26.1[a]	--
1974-75	--	6.5%	3.0[f]	14.2[a]	4.4[a]	1.1[a]	--	42.2[c]

SOURCE: *Minorities and Women in the Health Fields*, Bureau of Health Resources Development, Health Resources Administration, Public Health Service, Department of Health, Education and Welfare, except:

[a] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries*, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.

[b] Masters and Doctors degrees combined.

[c] Associations of Schools of Public Health, DPH or DrPH; excludes University of Puerto Rico.

[d] Earned Degrees Conferred

[e] Unpublished data from the American Osteopathic Association

[f] Unpublished data from the American Dental Association

TABLE L

SUMMARY COMPARISONS AMONG PROFESSIONS ON SELECTED MODVOPPP STUDENT CHARACTERISTICS
(By Percent)
1970

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH	UNITED STATES
STUDENT'S FAMILY INCOME: Under $5,000	6.8% *7*	12.4 *2*	7.3 *6*	11.7 *3*	9.8 *5*	11.3 *4*	16.9 *1*	N/A	
STUDENT'S FAMILY INCOME: Over $25,000	21.8% *1*	13.9 *3*	14.3 *2*	9.5 *6*	12.2 *4*	10.8 *5*	4.7 *7*	N/A	
FATHER'S OCCUPATION: Student's Profession	15% *1*	11 *2*	7 *4/5/6*	4 *7*	9 *3*	7 *4/5/6*	7 *4/5/6*	N/A	
ALL MODVOPPP Professions	21% *1*	16 *2/3/4*	14 *5*	8 *7*	16 *2/3/4*	16 *2/3/4*	10 *6*	N/A	
OTHER Profession, Management, etc.	48% *1*	42 *4/5*	47 *2*	39 *6*	42 *4/5*	43 *3*	31 *7*	N/A	28
ALL OTHER OCCUPATIONS	31% *7*	42 *3/4*	39 *6*	53 *2*	42 *3/4*	41 *5*	59 *1*	N/A	71
FATHER'S EDUCATION LEVEL: Highest GRAD/PROF degree	35% *1*	25 *2*	22 *3/4*	17 *6*	22 *3/4*	21 *5*	11 *7*	N/A	5
LOWEST: High School or Less	37% *7*	50 *5*	47 *6*	55 *2/3*	52 *4*	55 *2/3*	65 *1*	N/A	78

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education & Welfare, publication number (Health Resources Administration) 74-13, page 7. Educational level is approximate because numbers were estimated from bar graphs in the source.

NOTE: Numbers in italics are rank orders.

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TABLE M

TOTAL ENROLLMENTS IN SELECTED MODVOPPP HEALTH PROFESSIONS SCHOOLS IN THE UNITED STATES BY FAMILY INCOME: ACADEMIC YEAR 1970-71

(By Percent)

FAMILY INCOME (by Percent)	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Less than $5,000	6.8%	12.4	7.3	11.7	9.8	11.3	16.9	N/A
$5,000 - $9,999	20.1%	25.2	22.0	27.9	26.0	24.8	31.6	N/A
$10,000 - $14,999	24.9%	27.9	29.8	29.6	28.8	27.7	28.7	N/A
$15,000 - $19,999	14.8%	13.5	15.7	13.7	13.7	15.3	12.7	N/A
$20,000 - $24,999	11.5%	7.2	11.0	7.7	9.6	10.1	5.3	N/A
$25,000 or more	21.8%	13.9	14.3	9.5	12.2	10.8	4.7	N/A
TOTAL	100%	100	100	100	100	100	100	
Under $15,000	51.8	65.5	59.1	69.2	64.6	63.8	77.2	N/A
Over $15,000	48.1	34.6	41.0	30.9	35.5	36.2	22.7	N/A
Rank by Highest Income	*1*	*5*	*2*	*6*	*4*	*3*	*7*	*N/A*

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Health Resources Administration, Public Health Services, Department of Health, Education & Welfare, 1974.

TABLE N

DISTRIBUTION OF MODVOPPP HEALTH PROFESSIONS STUDENTS BY SIZE OF HOMETOWN: 1970-71

(By Percent)

SIZE OF HOMETOWN	*UNITED STATES*	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
0 - 24,999	*55%*	35	37	42	60	45	30	51	N/A
25,000 - 499,999	*26%*	42	32	40	30	35	35	32	N/A
500,000 or more	*18%*	22	30	18	10	20	35	16	N/A

SOURCE: *How Health Professions Students Finance Their Education, Department of Health, Education and Welfare Publication Number (Health Resources Administration) 74-13. October, 1973. Page 9 and 11.*

TABLE O

DISTRIBUTION OF MODVOPPP HEALTH PROFESSIONS STUDENTS BY FATHER'S OCCUPATION UNITED STATES: 1970 (By Percent)

Father's Occupation *(By Percent)*	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH	*ALL U.S. EMPLOYED MALES*
1) Profession of Student	15%	11	7	4	9	7	7	N/A	--
2) Other MODVOPPP Profession Health Worker	6%	5	7	4	7	9	3	N/A	--
3) Other Professional, Technical, Owner, Manager	48%	42	47	39	42	43	31	N/A	*28*
4) Clerical & Sales	12%	13	13	11	14	15	15	N/A	*13*
5) Craftsman, Skilled Worker	10%	16	16	15	16	16	24	N/A	*21*
6) Unskilled Worker	5%	8	6	6	7	7	11	N/A	*26*
7) Farmer, Farm Worker	3%	4	3	21	4	2	8	N/A	*5*
8) Other Occupations	1%	1	1	--	1	1	1	N/A	*6*
TOTAL	100%	100	100	100	100	100	100		*100*
Total in Health (1 & 2)	21%	16	14	8	16	16	10	N/A	--
Total Health Professionals, Managerial... (1,2,3)	69%	58	61	47	58	59	41	N/A	*28*
Rank by Professional Occupations	*1*	*4/5*	*2*	*6*	*4/5*	*3*	*7*	*N/A*	--

SOURCE: How Health Professions Student Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-31. October 1973, page 6.

TABLE P
DISTRIBUTION OF MODVOPPP HEALTH PROFESSIONS STUDENTS BY FATHER'S EDUCATIONAL LEVEL: 1970 (By Percent)

Approximate % Educational Level	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH	*UNITED STATES*
Graduate or Professional	35%	25	22	17	22	21	11	N/A	*5*
College Graduate	4%	12	15	14	10	7	8	N/A	*7*
Some College	14%	12	16	15	15	17	15	N/A	*10*
High School Degree or Less	37%	50	47	55	52	55	65	N/A	*78*
TOTAL	100%	100	100	100	100	100	100		*100*
More than College Degree	39%	37	37	31	32	28	19	N/A	*12*
Rank by College Degree or More	*1*	*2/3*	*2/3*	*5*	*4*	*6*	*7*	*N/A*	*N/A*

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education and Welfare, publication number (Health Resources Administration) 74-13, page 7. Educational level is approximate because numbers were estimated from bar graphs in the source.

CONTRACT: HEW OS-74-291

TABLE Q

SUMMARY COMPARISONS AMONG MODVOPPP PROFESSIONS ON SELECTED CHARACTERISTICS OF COST AND FINANCING FOR MOST RECENT YEAR OF AVAILABLE DATA

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
AVERAGE ANNUAL EXPENSES: 1970-71	$4,429 *6*	$6,710 *1*	$6,231 *3*	$4,473 *5*	$5,251 *4*	$6,301 *2*	$3,739 *7*	N/A
% LOANS UNDER $1,000: 1970-71	44.3 *7*	62.1 *3*	46.2 *6*	47.5 *4*	46.4 *5*	68.9 *2*	82.3 *1*	N/A
% LOANS OVER $2,000: 1970-71	13.1 *1*	5.8 *5*	11.9 *2*	9.5 *3*	7.9 *4*	1.2 *7*	2.3 *6*	N/A
% OF WOMEN RECEIVING LOANS: 1971-72	38.4 *4*	57.6 *1*	41.8 *3*	30.1 *6*	30.6 *5*	46.7 *2*	18.7 *7*	N/A
(% OF MEN RECEIVING LOANS)	34.4	49.6	39.2	31.7	41.9	38.5	19.2	N/A
% OF WOMEN RECEIVING SCHOLARSHIPS: 1971-72	23.5 *5*	44.7 *2*	24.1 *4*	20.4 *7*	30.6 *3*	80.0 *1*	22.9 *6*	N/A
(% OF MEN RECEIVING SCHOLARSHIPS)	20.0	35.2	24.3	25.0	29.2	27.0	20.2	N/A
% OF SCHOLARSHIPS FOR WOMEN: 1971-72	13.1 *2*	4.6 *4*	2.1 *7*	9.9 *3*	4.1 *5*	3.4 *6*	29.2 *1*	N/A
FEMALE % OF TOTAL ENROLLMENT	10.8 *3*	3.4 *5*	1.9 *6*	11.5 *2*	3.6 *4*	1.3 *7*	24.9 *1*	N/A

SOURCE: *How Health Professions Students Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973.*

NOTE: *Numbers in italics denote rank.*

TABLE R

AVERAGE ANNUAL EXPENSES OF HEALTH PROFESSIONS STUDENTS

School Year: 1970-71

SELECTED EXPENSE ITEMS	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1) School Expenses (tuition, fees, books, etc.)	$1552	$1770	$1615	$1362	$1458	$1788	$1131	N/A
2) Board & Lodging (maintenance of living quarters)	2219	2420	2306	1863	2038	2575	1531	N/A
3) All Other (taxes, insurance)	1758	2520	2310	1248	1755	1938	1077	N/A
TOTAL	5529	6710	6231	4473	5251	6301	3739	
Rank by Most Costly	*4*	*1*	*3*	*6*	*5*	*2*	*7*	

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973, page 10.

TABLE S

PROPORTION OF HEALTH PROFESSIONS STUDENTS REPORTING INCOME AND AVERAGE AMOUNT OF INCOME FROM EACH SOURCE

School year 1970-71

Source of Income	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY
Total Number of Students	40,414	2,151	16,645	5,001	2,832	1,146	20,706
Percent reporting income:							
Nonrefundable funds:							
Total	98%	98%	97%	98%	99%	97%	98%
Own earning & savings	67	69	72	81	77	75	73
Spouse's contribution	38	44	44	39	36	40	21
Parent"s contribution	54	52	51	50	57	50	48
Federal health professions scholarship	18	35	25	24	28	26	26
National Institutes of Health supported research	6	2	2	1	*	1	*
Other federal research and/or training grants	4	1	1	1	1	*	1
State government scholarship	8	7	11	7	6	11	9
Other nonrefundable funds	23	15	16	21	17	18	24
Percent reporting loans:							
Refundable funds: Tot.	54%	70%	64%	52%	54%	60%	43%
Federal health professions	25	44	34	26	32	29	20
Federal Office of Education	10	17	15	10	12	12	6
National defense student loan	3	5	4	3	3	8	7
Professional school	10	9	5	3	2	2	1
State government	10	24	13	8	9	17	5
Private bank	9	12	10	9	8	8	9
Other loans	12	22	16	15	9	10	8
Average amount of income:							
Nonrefundable funds:							
Total	$4,714	4,773	5,115	3,932	4,292	5,019	3,008
Own earnings & savings	1,578	1,675	1,769	1,439	1,541	2,030	1,671
Spouse's contribution	4,507	4,325	4,905	3,899	4,308	4,716	3,286
Parent's contribution	2,143	2,159	2,122	1,301	1,789	1,987	1,245
Federal health professions scholarship	964	469	727	763	628	682	697
National Institutes of Health supported research	844	611	688	1,891	929	512	600
Other Federal research and/or training grants	846	618	811	838	910	525	582
State government scholarship	581	946	607	704	709	432	552
Other nonrefundable funds	1,752	1,600	1,372	1,304	1,344	1,404	1,016
Refundable funds (loans):							
Total	$1,918	2,298	1,950	1,592	1,568	1,817	1,179
Federal health professions	1,084	661	865	885	800	859	702
Federal Office of Education guaranteed loans	1,414	1,564	1,550	1,298	1,324	1,486	1,130
National defense student loan	1,155	1,208	1,146	1,123	1,020	1,227	821
Professional school	1,269	628	729	670	517	846	684
State government	1,404	1,522	1,570	1,298	1,416	1,696	1,241
Private bank	1,407	1,488	1,503	1,278	1,355	1,487	1,033
Other loans	1,624	1,714	1,691	1,369	1,490	1,399	1,065
Total Average Federal Sources	6,307	5,131	5,787	6,798	5,611	5.291	4,532
Rank (most/least)	*2*	*6*	*3*	*1*	*4*	*5*	*7*
Total Average State Sources	1,985	2,468	2,177	2,002	2,125	2,128	1,793
Rank (most/least)	*6*	*1*	*2*	*5*	*4*	*3*	*7*

SOURCE: *How Health Professions Students Finance Their Education*, Department of Health, Education and Welfare Publication Number (Health Resources Administration)74-13, October, 1973, pages 30-31.

TABLE T: PROPORTION OF HEALTH PROFESSIONS STUDENTS' INCOME FROM EACH SOURCE BY DISCIPLINE: SCHOOL YEAR 1970-71

	Percentage of Students Income[a]						
	MEDICINE	OSTEOPATHY MEDICINE	DENTISTRY	VENTERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY
Nonrefundable Funds:							
Total	81%	74	79	82	83	81	85
Own earnings and savings	19%	18	20	25	23	25	35
Spouse's contribution	30%	30	34	32	31	32	20
Parent's contribution	20%	18	17	14	20	16	17
Federal health professions scholarship	3%	3	3	4	3	3	5
National Institutes of Health supported research	1%	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]
Other Federal research and/or training grants	1%	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]
State government scholarship	1%	1	1	1	1	1	1
Other nonrefundable funds	7%	4	4	6	4	4	7
Refundable funds (loans)							
Total	19%	26	21	18	17	19	15
Federal health professions	5%	5	5	5	5	4	4
Federal office of education guaranteed loans	2%	4	4	3	3	3	2
National defense student loan	1%	1	1	1	1	2	2
Own professional school loan	2%	1	1	-[b]	-[b]	-[b]	-[b]
State government loan	3%	6	3	2	3	5	2
Private bank loan	2%	3	3	2	2	2	3
Other loans	4%	6	4	4	3	2	2
TOTAL INCOME	100%	100	100	100	100	100	100
All Federal Sources	13%	13	13	13	12	12	13
All State Sources	4%	7	4	3	4	6	3

[a] *Income sources may not add to percent totals because of rounding.*

[b] *Less than 0.5 percent.*

SOURCE: How Health Professions Students Finance their Education, Department of Health, Education and Welfare Publication Number (Health Resources Administration) 74-13, October 1973, p.21

TABLE U

NUMBER AND
PROPORTION OF HEALTH PROFESSIONS STUDENTS REPORTING LOANS, DISTRIBUTION OF LOAN MONEY AND AGGREGATE AMOUNT OF LOANS FROM EACH SOURCE
SCHOOL YEAR 1970-71

SOURCE OF LOANS	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH	TOTAL ALL PROFESSIONS
Total number of students	40,414 *45.5*	2,515 *2.4*	16,645 *18.7*	5,001 *5.6*	2,832 *3.2*	1,146 *1.3*	20,706 *23.3*	N/A	88,895 *100%*
All sources	41,846 *49.6*	3,452 *4.1*	20,844 *24.7*	4,177 *4.9*	2,393 *2.8*	1,256 *1.5*	10,539 *12.5*	N/A	84,355 *100%*
Federal health professions	11,053 *51.0*	630 *2.9*	4,957 *22.9*	1,131 *5.2*	734 *3.4*	283 *1.3*	2,864 *13.2*	N/A	21,652 *100%*
Federal Office of Education	5,553 *42.9*	588 *4.5*	3,982 *30.8*	679 *5.2*	466 *3.6*	199 *1.5*	1,481 *11.4*	N/A	12,948 *100%*
National Defense Student Loan	1,462 *36.0*	122 *3.0*	841 *20.8*	179 *4.4*	100 *2.5*	117 *2.9*	1,230 *30.4*	N/A	4,051 *100%*
Professional School	5,083 *84.9*	126 *2.1*	598 *10.0*	133 *2.2*	25 *0.4*	23 *0.4*	- *0.0*	N/A	5,988 *100%*
State Government	5,958 *47.2*	799 *6.3*	3,432 *27.2*	506 *4.0*	368 *2.9*	336 *2.7*	1,235 *9.8*	N/A	12,634 *100%*
Private Bank	4,901 *45.8*	377 *3.5*	2,577 *24.1*	555 *5.2*	322 *3.0*	143 *1.3*	1,833 *17.1*	N/A	10.708 *100%*
Other Loans	7,836 *47.9*	809 *4.9*	4,457 *27.2*	1,015 *6.2*	377 *2.3*	155 *0.9*	1,725 *10.5*	N/A	16,374 *100%*

(Aggregate amount of loans--in thousands)

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973, page 36.

NOTE: Because the percentages were rounded off, they might not add up to precisely 100%.

TABLE V

DISTRIBUTION OF LOANS IN MODVOPPP HEALTH PROFESSIONS SCHOOLS BY AMOUNT OF LOAN AND PROPORTION OF STUDENTS REPORTING LOANS: 1971-72 (By Percent)

PERCENT LOANS	TOTAL	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Under $1000	51.6%	44.3	62.1	46.2	47.5	46.4	68.9	82.3	N/A
$1001 - $2000	38.1%	42.6	32.1	41.9	43.0	45.7	29.9	15.4	N/A
$2000 +	10.3%	13.1	5.8	11.9	9.5	7.9	1.2	2.3	N/A
Rank Under 1000		*7*	*3*	*6*	*4*	*5*	*2*	*1*	*N/A*
Proportion of Students Receiving from all Sources		54%	70	64	52	54	60	43	N/A

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973.

TABLE W

DISTRIBUTION OF SCHOLARSHIPS IN MODVOPPP HEALTH PROFESSIONS SCHOOLS BY SIZE OF SCHOLARSHIP: 1971-72 (By Percent)

PERCENT SCHOLARSHIPS	TOTAL	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Under $1000	81.2%	74.5	95.5	82.9	83.4	87.5	87.4	87.9	N/A
$1001 - $2000	15.1%	18.8	4.5	14.8	15.9	11.6	12.0	11.3	N/A
$2000 +	3.7%	6.7	--	2.3	0.7	0.9	0.6	0.8	N/A
Rank Under 1000		*7*	*1*	*6*	*5*	*3*	*4*	*2*	*N/A*
Proportion of Students Receiving from all Sources		59%	60	55	54	52	56	60	N/A

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973.

TABLE X

FEMALE ENROLLMENT AND FEMALE RECIPIENTS OF LOANS AND SCHOLARSHIPS IN MODVOPPP HEALTH PROFESSIONS SCHOOLS: 1971-72 (By Percent)

1971-72	TOTAL	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Women Percent of Total Enrollment[a]	-	10.8	3.4	1.9	11.5	3.6	1.3	24.9	N/A
% Scholarships for Women	13.7	13.1	4.6	2.1	9.9	4.1	3.4	29.2	N/A
% Loans for Women[b]	11.4	12.6	4.3	2.2	11.3	2.9	1.4	26.2	N/A

Total Scholarship Recipients[b]	TOTAL	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
% Women Receiving Scholarships	23.2	23.5	44.7	24.1	20.4	30.6	80.0	22.9	N/A
% Men Receiving Scholarships	22.0	20.0	35.2	24.3	25.0	29.2	27.0	20.2	N/A

Total Loans Recipients[b]	TOTAL	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
% Women Receiving Loans	28.2	38.4	57.6	41.8	30.1	30.6	46.7	18.7	N/A
% Men Receiving Loans	32.8	34.4	49.6	39.2	31.7	41.9	38.5	19.2	N/A

SOURCES: [a] *Women in Health Careers: Status of Women in Health Careers in the United States and Other Selected Countries, Chart Book for International Conference on Women in Health, The American Public Health Association, 1975.*

[b] *Recipients of Health Professions Loans and Scholarships, 1971-72, United States Department of Health, Education and Welfare.*

TABLE Y

SOURCES OF HEALTH PROFESSIONS STUDENTS' NONREFUNDABLE INCOME BY MARITAL STATUS: SCHOOL YEAR 1970-71

	Percent of students' income[a]						
Source and marital status	Medicine	Osteopathy	Dentistry	Veterinary Medicine	Optometry	Podiatry	Pharmacy
All nonrefundable sources:							
Total percent	87%	74%	79%	82%	83%	81%	85%
Single	75	70	72	78	77	74	80
Married, no children	88	81	86	88	88	86	90
Married, one child	78	69	76	75	83	81	88
Married, two or more children	75	68	75	78	83	82	90
Own earnings and savings	19	18	20	25	23	25	35
Single	24	23	24	34	29	30	40
Married, no children	13	13	15	18	17	19	27
Married, one child	21	19	23	22	26	31	35
Married, two or more children	24	23	29	28	29	31	32
Spouse's contribution	30	30	34	32	31	32	20
Single	—	—	—	—	—	—	—
Married, no children	55	53	58	56	55	52	46
Married, one child	30	30	34	32	37	29	32
Married, two or more children	19	21	22	30	31	29	24
Parent's contribution	20	18	17	14	20	16	17
Single	36	38	38	29	38	35	26
Married, no children	11	10	8	6	9	9	8
Married, one child	11	10	9	8	10	10	7
Married, two or more children	11	11	7	4	7	6	5
Federal health professions scholarship	3	3	3	4	3	3	5
Single	4	3	4	5	5	4	6
Married, no children	2	2	2	2	2	2	4
Married, one child	4	4	3	6	4	4	3
Married, two or more children	6	3	5	6	6	4	3
Other Federal and state grants and scholarships	3	1	1	1	1	1	1
Single	3	1	1	2	1	1	2
Married, no children	3	1	1	1	—[b]	1	—[b]
Married, one child	3	2	1	1	1	1	3
Married, two or more children	1	1	3	—[b]	1	2	1
Other nonrefundable funds	7	4	4	6	4	4	7
Single	8	4	4	6	4	3	6
Married, no children	5	2	2	5	4	3	5
Married, one child	9	4	5	6	5	6	9
Married, two or more children	14	9	9	9	9	11	25

[a] Individual sources may not add to percent totals due to rounding.

[b] Less than 0.5 percent.

SOURCES: *How Health Professions Students Finance Their Education*, Department of Health, Education & Welfare Publication Number (Health Resources Administration) 74-13, October, 1973, page 22-23.

CONTRACT: HEW OS-74-291

TABLE Z
MODVOPPP HEALTH PROFESSIONS STUDENTS' MARITAL STATUS, SPOUSAL SUPPORT, BY PROFESSION: 1970-71

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
% OF MARRIED STUDENTS	53	40	45	51	56	46	69	N/A
RANK	*3*	*7*	*6*	*4*	*2*	*5*	*1*	
% MARRIED/NO CHILDREN	34	35	37	31	32	37	18	N/A
% WITH ONE CHILD	10	14	12	12	8	11	9	N/A
% WITH MORE THAN ONE CHILD	3	11	6	6	4	6	4	N/A
SPOUSAL CONTRIBUTION	$4,507	$4,325	$4,905	$3,899	$4,308	$4,716	$3,286	N/A
% OF STUDENT INCOME	38	44	44	39	36	40	21	N/A
RANK	*5*	*1/2*	*1/2*	*4*	*6*	*3*	*7*	

SOURCE: How Health Professions Students Finance Their Education, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973.

TABLE AA

DISTRIBUTION OF MARRIED STUDENTS IN EACH MODVOPPP HEALTH PROFESSION SCHOOL YEAR 1970-71 (By Percent)

	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
Married Students	47%	60	55	49	44	54	31	N/A

SOURCE: *How Health Professions Students Finance Their Education, Department of Health, Education and Welfare Publication Number (Health Resources Administration) 74-13. October, 1973. Page 9 and 11.*

TABLE BB

RELATIONSHIP BETWEEN INCOME AND EXPENSES FOR MODVOPPP HEALTH PROFESSIONS STUDENTS SCHOOL YEAR: 1970-71

(By Percent)

EXPENSES EXCEED INCOME	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
1) Total, all students	37%	50	44	41	49	50	44	N/A
2) Total, single students	41%	53	50	46	54	57	44	N/A
3) Total, married students (no children)	31%	44	36	30	39	43	35	N/A

SOURCE: *How Health Professions Students Finance Their Education, Department of Health, Education and Welfare Publication Number (Health Resources Administration), 74-13, October, 1973.*

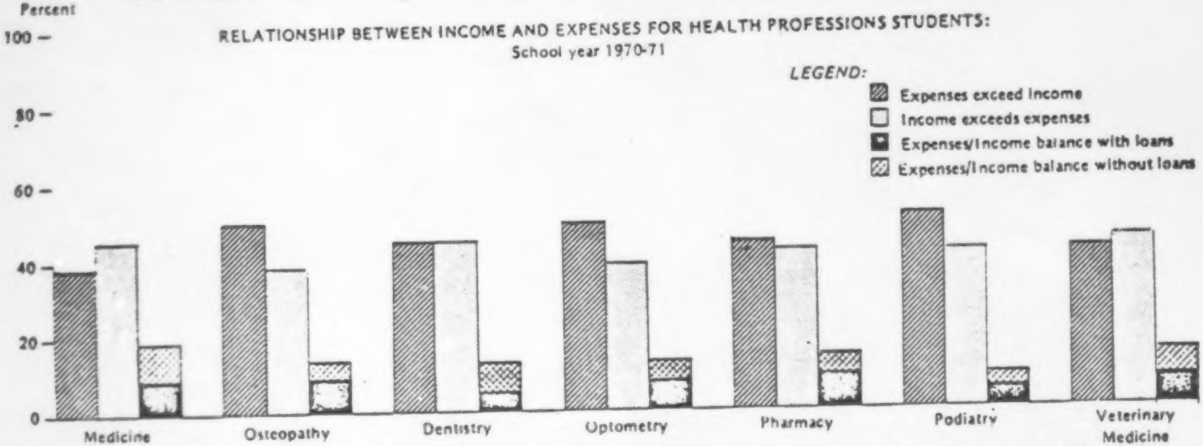
TABLE CC

RELATIONSHIP BETWEEN INCOME AND EXPENSES FOR HEALTH PROFESSIONS STUDENTS BY MARITAL STATUS:

School Year 1970-71

Relation between income and expenses	Medicine	Osteopathy	Dentistry	Veterinary Medicine	Optometry	Podiatry	Pharmacy
Total, all students	100%	100%	100%	100%	100%	100%	100%
In balance	18	13	12	15[1]	13	9	14
With loans	8	8	7	6	6	4	5
Without loans	10	5	5	8	7	5	9
Income exceeds expenses	45	37	44	44	38	41	42
Expenses exceed income	37	50	44	41	49	50	44
Total, single students	100	100	100[a]	100	100	100	100
In balance	25	21	19	21	19	13	18
With loans	10	11	10	8	8	6	7
Without loans	15	10	10	13	11	7	11
Income exceeds expenses	33	26	31	33	27	29	38
Expenses exceed income	41	53	50	46	54	57	44
Total, married - no children	100	100	100	100	100[a]	100[a]	100
In balance	8	8	6	8	6	4	8
With loans	4	6	3	4	3	2	3
Without loans	4	2	3	4	3	2	5
Income exceeds expenses	61	48	58	62	54	52	57
Expenses exceed income	31	44	36	30	39	43	35
Total, married - one child	100	100	100	100	100	100	100
In balance	12	5	5	7	6	7	3[a]
With loans	7	4	5	5	5	3	3
Without loans	5	1	—	2	1	3	1
Income exceeds expenses	52	40	49	48	44	45	37
Expenses exceed income	36	55	46	45	50	48	60
Total, married - two or more children	100%	100%	100%	100%	100%	100%	100%
In balance	16	8	9	7	9	11	11
With loans	10	5	6	5	8	7	2
Without loans	6	3	3	2	1	4	9
Income exceeds expenses	46	37	43	40	42	44	34
Expenses exceed income	37	55	48	53	49	44	55

[a] *Individual sources may not add to percent total due to rounding.*


RELATIONSHIP BETWEEN INCOME AND EXPENSES FOR HEALTH PROFESSIONS STUDENTS:
School year 1970-71

SOURCE: *How Health Professions Students Finance Their Education*, Department of Health, Education & Welfare publication number (Health Resources Administration) 74-13, October, 1973, page 37.

TABLE DD

PROPORTION OF STUDENTS WITH DEBTS IN HEALTH PROFESSIONS SCHOOLS AND AVERAGE AMOUNT OF INDEBTEDNESS BY SCHOOL CLASS: JUNE 1971

SCHOOL CLASS	MEDICINE	OSTEOPATHIC MEDICINE	DENTISTRY	VETERINARY MEDICINE	OPTOMETRY	PODIATRY	PHARMACY	PUBLIC HEALTH
All classes:								
% reporting debts	65	79	74	66	65	70	56	
Average debt	$4,289	$5,966	$4,888	$3,534	$3,559	$4,115	$2,477	N/A
Freshman:								
% reporting debts	61	72	66	58	57	60	52	
Average debt	$2,975	$3,457	$3,162	$2,670	$2,560	$3,119	$1,974	N/A
Sophomore:								
% reporting debts	62	75	73	70	67	70	58	
Average debt	$3,545	$4,930	$4,149	$3,180	$3,032	$3,691	$2,315	N/A
Junior:								
% reporting debts	68	84	78	68	68	76	57	
Average debt	$5,194	$6,069	$5,322	$3,851	$3,898	$4,368	$2,650	N/A
Senior:								
% reporting debts	72	84	81	72	73	80	58	
Average debt	$5,504	$9,796	$6,900	$4,552	$5,047	$5,318	$3,261	N/A
Rank of Sr. debt	*3*	*1*	*2*	*6*	*5*	*4*	*7*	

SOURCE: *How Health Professions Students Finance Their Education, Department of Health, Education and Welfare Publication Number (Health Resources Administration) 74-13, October, 1973.*

NOTE: *Numbers in italics denote rank.*

TABLE EE
PRINCIPAL EMPLOYER REPORTED TO AMA IN 1965 BY STUDY SUBJECTS

Principal Employer	WOMEN		MEN	
	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
Research Institutions excluding hospitals	12	0.9	6	0.4
Clinic or physician employer	60	4.5	68	4.3
Medical school or parent university	90	6.7	72	4.5
Other educational institution	30	2.2	6	0.4
Military (Air Force, Army, Navy)	5	0.4	36	2.3
U.S.P.H.S.	6	0.4	12	0.8
Veterans Administration	39	2.9	34	2.1
Other federal post	8	0.6	2	0.1
Public health department	97	7.3	22	1.4
Hospitals	176	13.2	100	6.3
Pharmaceutical and other industry	13	1.0	19	1.2
Self-employed	642	48.1	1,192	75.3
No data	158	11.8	15	0.9
TOTAL	1,336	100.0	1,584	100.0

SOURCE: Powers, et al., "Practice Patterns of Physicians", Journal of Medical Education, Volume 44, June, 1969, page 490.

TABLE FF

PROFESSIONAL ACTIVITY STATUS OF PHYSICIANS (MDs)

BY SEX: 1963 and 1973

STATUS	TOTAL	%	MEN			WOMEN		
			1973	▷ %	▽ %	1973	▷ %	▽ %
Active MDs	324,367	100	300,013	92.5	89.3	24,354	7.5	79.6
Inactive MDs[1]	42,012	100	35,798	85.2	10.7	6,214	14.8	20.3
Total MDs	366,379	100	335,811	91.7	100%	30,568	8.3	100%
			1963			1963		
Active MDs	261,728	100	246,771	94.3	95.7	14,957	5.7	86.3
Inactive MDs[2]	13,412	100	11,047	82.4	4.3	2,365	17.6	13.6
Total MDs	275,140	100	257,818	93.7	100%	17,322	6.3	100%

[1] Includes physicians who are inactive, not classified as to activity, or address unknown to American Medical Association.

[2] Excludes 1,335 physicians with address unknown to American Medical Association.

SOURCES: *G.A. Roback, Distribution of Physicians in the United States, 1973. Regional, State, County and Metropolitan Areas, American Medical Association, Chicago, 1974, page 38.*

C.N. Theodore, J.N. Haug and B.C. Martin, Special Statistical Series --Selected Characteristics of the Physician Population, 1963 and and 1967, American Medical Association, Chicago, 1968, page 22.

American Medical Association Center for Health Services Research and Development, Special Tabulations on Women Physicians, 1973--American Medical Association Physician Master File (unpublished), American Medical Association, Chicago.

FINAL REPORT: Medicine
CONTRACT: HEW OS-74-291
APPENDIX G

TABLE GG

DISTRIBUTION OF PHYSICIANS AMONG SPECIALTY GROUPS, BY SEX: DECEMBER 31, 1976

Specialty Group	No. of Women Physicians	% Women of Total Physicians in Specialty	% of All Women Physicians in Specialty	No. of Men Physicians	% Men of Total Physicians in Specialty	% of All Men Physicians in Specialty	TOTAL
			100.0%			100.0%	
General Practice	2,462	4.4%	10.9	53,896	95.6%	18.2	56,358
Internal Medicine	3,242	5.6	14.4	54,617	94.4	18.4	57,859
Surgery	855	1.2	3.8	69,154	98.8	23.4	70,009
Ob/Gyn	1,421	7.2	6.3	18,349	92.8	6.2	19,770
Pediatrics	4,247	21.3	18.8	15,671	78.7	5.3	19,918
Psychiatry	3,209	13.1	14.2	21,241	86.9	7.2	24,450
Radiology	754	5.3	3.3	13,585	94.7	4.6	14,339
Anesthesiology	1,655	14.3	7.3	9,902	85.7	3.3	11,557
Pathology	1,435	13.2	6.4	9,471	86.8	3.2	10,906
Other	3,283	9.8	14.6	30,250	90.2	10.2	33,533
TOTAL	22,563[a]	7.1%		296,136[b]	92.9		318,699

[a] *Excludes 4,471 physicians (481 not classified, 3,539 inactive and 451 address unknown).*

[b] *Excludes 21,653 physicians (3,048 not classifies, 15,849 inactive, and 2,756 address unknown).*

SOURCES: Betty Vetter/Scientific Manpower Commission/Washington D.C., December 31, 1971.

TABLE HH

INCOME OF AND HOURS WORKED BY PHYSICIANS (M.D.), BY SPECIALTY AND SEX: 1972

Specialty	Average net income from medical practice(a)		Average hours of direct patient care per week(b)		Average net income per average patient care hours per week(a÷b)	
	Males	Females	Males	Females	Males	Females
All specialties	$ 47,945	$ 27,558	46.5	37.4	$ 1,031	$ 737
Anesthesiology	50,898	35,543	48.3	43.5	1,054	817
General (family) practice	41,634	22,339	47.9	39.2	869	570
Internal medicine	45,043	23,267	47.5	40.7	948	490
Obstetrics and gynecology	53,940	32,864	49.2	37.4	1,096	879
Pediatrics	40,529	23,549	45.8	37.0	885	512
Psychiatry	40,433	24,797	40.8	32.1	991	772
Radiology	58,891	33,308	41.9	34.9	1,405	795
Surgery	56,377	40,000	48.0	37.8	1,174	1,058
All other	44,910	27,711	39.7	35.8	1,131	698

SOURCE: B. H. Kehrer, *"Professional and Practice Characteristics of Men and Women Physicians," Profiles of Medical Practice, '74, American Medical Association, Chicago, 1974, page 42. Based on sample survey of about 1,400 women and 7,100 men physicians.*

TABLE II

COMPARISON OF NUMBERS AND PERCENT OF MARRIED MEN AND WOMEN RESPONDENTS BY YEAR

YEAR		MARRIED		NOT MARRIED		NO RESPONSE		TOTAL	
		MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
1931	N	168	91	7	34	4	6	179	131
	%	93.9	69.5	3.9	26.0	2.2	4.5	100%	100%
1936	N	196	126	3	43	2	5	201	174
	%	97.5	72.4	1.4	24.7	1.0	2.9	100%	100%
1941	N	229	163	4	37	5	1	238	201
	%	96.2	81.1	1.7	18.4	2.1	[illegible]	100%	100%
1946	N	298	145	5	48	9	4	312	200
	%	95.5	74.0	1.6	24.0	2.9	2.0	100%	100%
1951	N	286	264	14	87	3	7	303	358
	%	94.4	73.7	4.5	24.3	1	2.0	100%	100%
1956	N	3.9	206	20	63	12	3	351	272
	%	90.9	75.7	5.7	23.2	3.4	1.1	100%	100%

SOURCE: Powers, et al., "Practice Patterns of Physicians", Journal of Medical Education, Volume 44, June 1969, page 490.

TABLE JJ

PARTICIPATION OF PHYSICIANS IN PROFESSIONAL SOCIETIES

Participation in societies	Women Physicians											Men Physicians	
	Married (M)			Other (O)*			Single (S)			Total		Total	
	No.	% of M	% of Total	No.	% of O	% of Total	No.	% of S	% of Total	No.	%	No.	%
AMA													
Members	473	79.6	45.5	107	89.9	10.3	279	85.3	26.8	859	82.6	644	92.4
Officers	54	9.1	5.2	15	12.6	1.4	34	10.4	3.3	103	9.9	133	19.1
Specialty societies													
Members	298	50.2	28.7	75	63.0	7.2	223	68.2	21.4	596	57.3	449	64.5
Officers	27	4.5	2.6	15	12.6	1.4	31	9.5	3.0	73	7.0	75	10.8
Honorary societies													
Members	117	19.7	11.3	23	19.3	2.2	78	23.9	7.5	218	21.0	127	18.2
Officers	3	.5	.3	2	1.7	.2	1	.3	.1	6	.6	5	.7

"Other" includes widowed, separated, divorced and no response categories.

SOURCES: Roscoe A. Dykman and John M. Stalnaker; Survey of Women Physicians Graduating from Medical School, 1925-1940, page 29.

TABLE KK

ACCEPTANCE RATES OF APPLICANTS BY AGE, 1972-73 ENTERING CLASS

Age*	17 - 20	21 - 23	24 - 27	28 - 31	32 - 37	Over 38**	Unknown	Total
All Applicants--Total	1,820	22,175	8,367	2,625	911	222	15	36,135
Percent	5.0	61.4	23.2	7.3	2.5	0.6	0.0	100%
Men	1,376	18,996	7,166	2,205	732	166	14	30,655
Percent	4.9	62.0	23.4	7.2	2.4	0	0	100%
Women	444	3,179	1,201	420	179	56	1	5,480
Percent	8.1	58.0	21.9	7.6	3.3	1.0	0	100%
Accepted Applicants--Total	997	9,782	2,166	611	177	18	6	13,757
Percent	54.8	55.1	25.9	23.3	19.4	8.1	0.0	38.1
Men	757	8,256	1,739	488	141	11	6	11,398
% of All Applicants	55.0	43.5	24.3	22.1	19.3	6.6	92.9	37.2
% of Accepted Applicants	6.6	72.4	15.25	4.3	1.7	0	0	100%
Women	240	1,526	427	123	36	7	0	2,359
% of All Applicants	53.4	48.0	35.6	29.3	20.1	12.5	0	4.3
% of Accepted Applicants	10.2	64.7	18.1	5.2	1.4	0	0	100%

**As of September 1972*

***Oldest accepted male applicant was 42; oldest accepted female applicant was 43. Oldest male applicant was 56; oldest female applicant was 55.*

SOURCE: "Study of United States Medical School Applicants, 1972-73", Dubé and Johnson, Journal of Medical Education, page 863.

TABLE LL

MEAN SCORES ON THE MCAT SUBTESTS FOR MEN AND WOMEN APPLICANTS TO ENTERING CLASSES, 1971-72 AND 1972-73

Entering Year	Verbal Ability		Quantitative Ability		General Information		Science		No. of Examinees		
	M	W	M	W	M	W	M	W	M	W	Total
1971	534	556	577	552	533	539	537	513	24,647	3,618	28,265
1972	527	555	580	552	528	537	539	516	29,475	5,238	34,713

SOURCE: *"Study of United States Medical School Applicants, 1973-74," Dube and Johnson, Journal of Medical Education, page 857.*

TABLE MM

MEDICAL STUDENTS ADMITTED 1971-1972 THROUGH 1973-1974 AND STILL IN SCHOOL JUNE 1974, BY SEX

	MALE			FEMALE		
		RETAINED			RETAINED	
	ADMITTED	NO.	%	ADMITTED	NO.	%
1971-1972	9,504	9,130	96.1	1,458	1,370	94.0
1972-1973	10,467	10,160	97.1	2,053	1,958	95.4
1973-1974	10,550	10,366	98.3	2,512	2,476	98.6

Source: *E. Weinberg and J. Rodney "The Academic Performance of Women Students in Medical School," Journal of Medical Education 48 (March 1973); 240-247*